

# **INSTALLATION RESTORATION PROGRAM**

## **PRELIMINARY ASSESSMENT/ SITE INSPECTION**

### **VOLUME II APPENDICES A-H**

**223rd COMBAT COMMUNICATIONS SQUADRON  
HOT SPRINGS AIR NATIONAL GUARD STATION  
ARKANSAS AIR NATIONAL GUARD  
HOT SPRINGS, ARKANSAS**

**JULY 1995**

*Prepared For*

**AIR NATIONAL GUARD READINESS CENTER  
ANDREWS AFB, MARYLAND**

*Prepared By*

**Operational Technologies Corporation  
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**APPENDIX A**

**HAZARD RANKING SYSTEM (HRS) "DATA REQUIREMENTS FOR  
FEDERAL FACILITY DOCKET SITES" PACKAGE**



**PRELIMINARY ASSESSMENT (PA) SITE INSPECTION (SI)  
DATA REQUIREMENTS FOR FEDERAL FACILITY DOCKET SITES**

**Hot Springs ANGSS, Arkansas**

1. **Supply copies of all sampling data, on-site and off-site, including location map, detection limits (see definitions below), raw data sheets, QA/QC documents, date(s) sampled, analytical method(s) used, well or boring logs, and sampling technique(s).**

All sampling data is provided in Appendix E of the PA/SI Report. Locations of samples and sampling techniques are provided in Section 5.0 of the PA/SI Report, while boring logs are provided in Appendix B.

2. **Locate and identify on a map all known or suspected sources (see definition below). Supply all information about source(s) such as: dates of operation, use, or spillage; amounts of material deposited, stored, or spilled; dimensions of source(s); known or suspected hazardous substances (see definition below), etc.**

This information is provided in Sections 4.2 and 5.4 of the PA/SI Report.

3. **Provide a description of all aquifers beneath the site, including description of overlying materials, depth first encountered, thickness, and composition.**

In general, few productive aquifers exist in northern and western Arkansas, therefore, public water supplies are usually derived from surface water sources. In contrast, alluvial aquifers are heavily used in eastern Arkansas for agricultural purposes. The exception to this is the numerous hot and cool natural springs which exist in a concentrated area in and around Hot Springs National Park, located virtually in the center of the city of Hot Springs. The famous Hot Springs consist of over forty springs which produce approximately 800,000 gallons per day of water at approximately 61°C. The localized aquifer which feeds these springs consists of Bigfork chert and Arkansas novaculite formations located north and northeast of the Station about 3-5 miles. The very permeable chert (fracture permeability) represents the recharge zone of the aquifer, lying northwest of the springs. The closest portion of this recharge zone is 1.9 miles from the Station. The water which leads to the hot springs infiltrates 4,500 to 7,500 feet in the chert, is heated and then travels through faults in the novaculite to reach the surface. The age of the hot springs water is estimated to be approximately 4,400 years.

Productive water wells in the Hot Springs area are generally associated with either the Bigfork chert or Arkansas novaculite formations. Of the underlying Paleozoic formations, only the chert has good permeability, while the shale, sandstone, and novaculite in the area have both limited permeability and holding capacity. There are no other sources of groundwater in the area besides these consolidated rock formations. Groundwater storage is limited to fractures and fissures in the consolidated formations. Therefore, water wells generally provide yields suitable only for domestic supply, on the



order of 10 gallons per minute or less, at depths of around 100 feet or less. The quality of groundwater is generally good, except for the presence of excessive iron. Commonly, the depth to groundwater is approximately 20 feet below land surface (BLS),

4. For each source, choose one description from Table 1 that describes the groundwater contaminant. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.

A groundwater investigation has not yet been conducted, therefore, the status on groundwater contaminant has not been determined.

5. Provide the location of all drinking water wells in all aquifers beneath the site in a 4-mile radius from the site (property boundary) by HRS distance ring and locate the wells within a one-mile radius on a 7.5-minute topographic map. Provide information on depth of well(s), screening interval(s), depth of aquifer(s) encountered, population served for multiple wells (i.e., municipal system), provide the number of wells, location of all wells (regardless of 4-mile limit), average annual pumpage of each well (regardless of 4-mile limit), and total population served by system. Include information on all standby wells.

Approximately 200+ wells exist within the 4-mile radius. Well logs were obtained for a 2-mile radius from the site. A copy of these well logs is provided herein. (See Figure A.1 for location of the wells.) (Source: Arkansas Geologic Commission)

6. Provide information and location (on 7.5-minute topographic map) of wells within 4 miles that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.

Approximately 200+ wells exist within the 4-mile radius. Well logs were obtained for a 2-mile radius from the site. Most wells are located in recreational/resort areas outside of the Hot Springs city limits and around Lake Hamilton, southeast of the Station, and therefore, are most likely used for domestic supply purposes only. (See Figure A.1 for location of the wells.) (Source: Arkansas Geologic Commission)

7. Provide average number of persons per residence for county (or counties) that site is located in per the U.S. Census Bureau.

The average number of persons per residence for Garland County is 2.32. (Source: 1990 Census from the State Data Center, University of Arkansas-Little Rock)

8. Identify and locate all surface water bodies within two miles of site, marking off the drainage routed (shown on 7.5-minute topographic map) from each source to applicable surface water bodies. Provide the average annual cubic feet per second flow for each surface water body within 15 miles downriver or radius from the point



**of probable entry into surface water. For lakes, provide information on inflow and outflow.**

See Figure A.2 for the location of all surface bodies of water within a 2-mile radius from the site. The average annual cubic feet per second flow (cfs) for the Ouachita River at Blakely Mountain Dam near Hot Springs is 1485 cfs and Ouachita River near Malvern is 2412 cfs. Information for Stokes Creek, Molly Creek and Hogan Creek were not obtained since these creeks are intermittent. (Source: Arkansas Soil and Water Conservation Commission October, 1987)

- 9. For each source, choose one description from Table 2 that describes the surface water containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

All sources: Evidence of hazardous substance migration from source area.

- 10. Provide the number of acres in each drainage basin.**

The number of acres in the drainage basin for Lake Hamilton is 908,800 acres. (Source: Arkansas Soil and Water Conservation Commission October, 1987)

- 11. From Table 3, choose the predominant soil group (surface soil) which comprises the largest total area within each drainage area.**

The predominant soil group is medium to coarse-textured soils with high infiltration rates. (Source: Section 3.3.3 of the Report)

- 12. Provide the two-year, 24-hour rainfall.**

The two-year, 24-hour rainfall for the Hot Springs area is 4.2"  $\pm$  0.1". (Source: S. Climatic Data Center)

- 13. From Table 4, choose the floodplain category of each source (supply FEMA floodplain map) and determine if each source meets the criteria from Table 5 (engineer's certification).**

The floodplain category that best describes this area is outside of the 500-year floodplain. (Source: FEMA Map)

- 14. Provide the location of all drinking water intakes within 15 downstream miles (rivers) or 15-mile radius (lakes, bays, etc.). Provide information on population served. For multiple intakes (i.e., municipal system), provide information on the number of intakes, location of all intakes (regardless of 15-mile limit), and total population served by system. Include information on all standby intakes.**



The surface bodies of water 15-miles downstream are Lake Hamilton and Lake Catherine. These bodies of water are not suitable for drinking purposes therefore, there are no drinking water intakes. (Source: Little Rock Power and Light)

15. **Provide information and location of intakes within 15 miles downriver (radius in lake or bay) that are used to irrigate five or more acres of commercial food or forage crops, or watering of commercial livestock, or ingredient in commercial food preparation, or supply for aquaculture, or supply for a major or designated water recreation area, excluding drinking water use.**

The water from these bodies of water may be used to water peoples personal gardens. Other than this, the water is not used for the above purposes. (Source: Little Rock Power and Light)

16. **Provide any surface water body 15 miles downriver (radius in lakes or bay) used for drinking water.**

The surface bodies of water 15-miles downstream are Lake Hamilton and Lake Catherine. These bodies of water are not suitable for drinking purposes therefore, this question does not apply. (Source: Little Rock Power and Light)

17. **Provide the average human food chain production (pounds per year) for each surface water body 15 miles downriver or 15-mile radius in lake.**

Information for this question is not available at this time.

18. **Within a 4-mile radius from the site and 15 miles downriver, or radius in lake, identify all sensitive environments that exist. Provide original documentation (USF&W, Natural Heritage Database, State agencies, NOAA, etc.), multiple sensitive environments within a sensitive environment.**

There are a number of endangered or threatened species in the state of Arkansas, a few of which could potentially occur in the Garland County area. These include the red-cockaded woodpecker, the Indian bat, the bald eagle, the Arkansas fatmucket mussel, and the Florida panther (also known as cougar). The bald eagle has been known to winter at Lake Ouachita northwest of the Hot Springs area, and there have been confirmed nesting sites in Montgomery County, the county directly west of Garland County. Other than the bald eagle, there are no records of sightings of endangered or threatened species in the Hot Springs area, nor are there any critical habitats in the area. (Source: Section 3.6 of the PA/SI Report)

19. **What is the linear frontage of all wetlands 15 miles downriver or 15-mile radius in lake?**

Wetland maps are still under development by USF&W at this time. (Source: U.S. Fish and Wildlife) There are approximately 93,000 acres of wetlands in the Upper Ouachita Basin (a seven county area in which Garland County is in the northeast portion).



Garland County is in the uplands of this basin, and therefore no wetlands have been identified in the county. The 93,000 acres of wetlands occur primarily in downstream, lowland areas of the Upper Ouachita Basin. (Source: Section 3.6 of the PA/SI Report)

20. Provide the location and number of persons residing, working, attending school, or day care within 200 feet. This includes both the Air and Army Guard.

The number of people working within 200-feet of the site is 25 and during Unit Training Assembly (UTA) weekends, 153. (Source: PA/SI Report)

21. Identify all terrestrial sensitive environments that exist on-site. Provide original documentation (USF&W, Natural Heritage Database, State agencies, NOAA, etc.) and locate each on a 7.5-minute topographic map. Note that there could be multiple sensitive environments within a sensitive environment.

There are no terrestrial sensitive environments on-site. (Source: PA/SI Report)

22. For each source, choose one description from Table 8 that describes the accessibility to a human population. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.

The best description for the accessibility to human population is surrounded by maintained fence.

23. Provide the total number of people in following distance rings from source(s)?

<u>Ring</u> <u>Distance</u>	<u>Total</u> <u>Persons</u>
• 0 - 1/4 mile	84
• 1/4 - 1/2 mile	318
• 1/2 - 1 mile	1,626
• 1 - 2 miles	9,868
• 2 - 3 miles	12,077
• 3 - 4 miles	11,191

Use 1990 Census data and/or actual house counts. Document how calculated.

(Source: 1990 Census (block group level population aggregates))

Prepared by: GEOQUEST Information Technologies, Inc.

24. For each source, choose one description from Table 9 that describes the gaseous containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]), as to why the source meets that description and not any other in the Table. From Table 10, choose the appropriate description of each source type. For each source, choose one description from Table 11 that describes



**that particulate containment. Provide complete documentation (i.e., engineering diagrams, photographs [originals]) as to why the source meets that description and not any other in the Table.**

Table 9: All situations except those specifically listed below.

Table 10: Contaminated soil; containers (not elsewhere specified)

Table 11: All situations except those specifically listed below.

- 25. Provide the location and area (in acres) of all wetlands within 4 miles of the site.**

Wetland maps are still under development by USF&W at this time. (Source: U.S. Fish and Wildlife) There are approximately 93,000 acres of wetlands in the Upper Ouachita Basin (a seven county area in which Garland County is in the northeast portion). Garland County is in the uplands of this basin, and therefore no wetlands have been identified in the county. The 93,000 acres of wetlands occur primarily in downstream, lowland areas of the Upper Ouachita Basin. (Source: Section 3.6 of the PA/SI Report)

- 26. Contact EPA Regional Office immediately if any radionuclides are present or suspected at site and supply all radiological information known to date.**

There are no radionuclides present or suspected at the site.

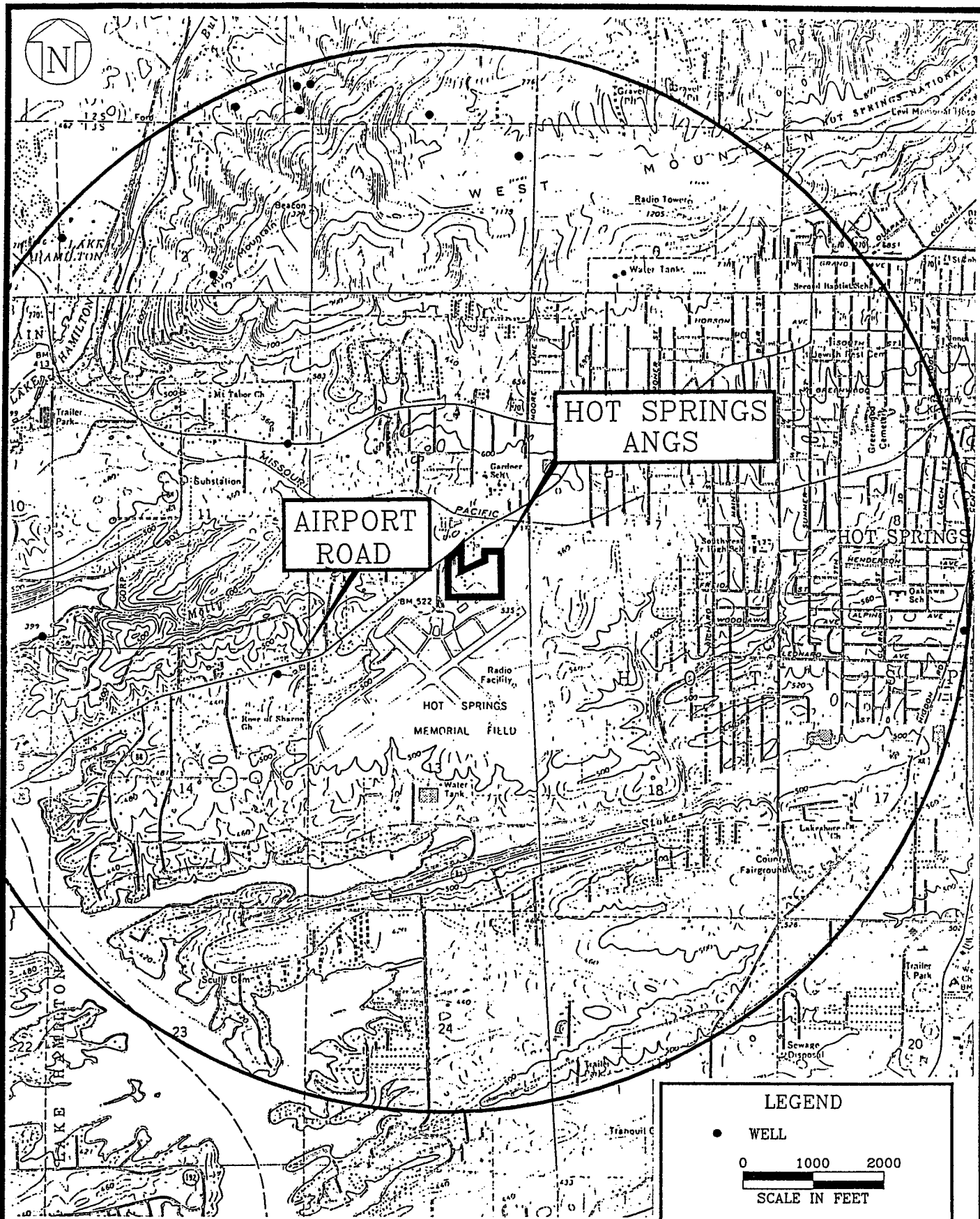
- 27. For all of the above information, use primary data source and supply two copies or specify where copies may be obtained.**

- 28. Provide any removals or remedial actions taken place at site.**

Two UST removals took place in 1989: a 2,000 gallon tank and a 1,000 gallon tank, both of which variously contained diesel and gasoline. (Source: PA/SI Report)

- 29. If information relevant to a question already has been provided to the EPA, your answer may precisely cite the previous submittal by title, date, page, and paragraph number rather than resubmitting the information. To assist in your efforts, also enclosed is a copy of EPA's draft Preliminary Assessment Guidance.**





SOURCE : USGS 7.5 MINUTE TOPOGRAPHIC MAP, HOT SPRINGS SOUTH, ARK, 1976.

FIGURE A.1

LOCATION OF WELLS WITHIN  
A 2-MILE RADIUS

223rd CBCS, Hot Springs ANG  
Hot Springs, Arkansas

P\HOTSPRNG\WELL

OPTTECH  
OPERATIONAL TECHNOLOGIES  
CORPORATION

JULY 1995



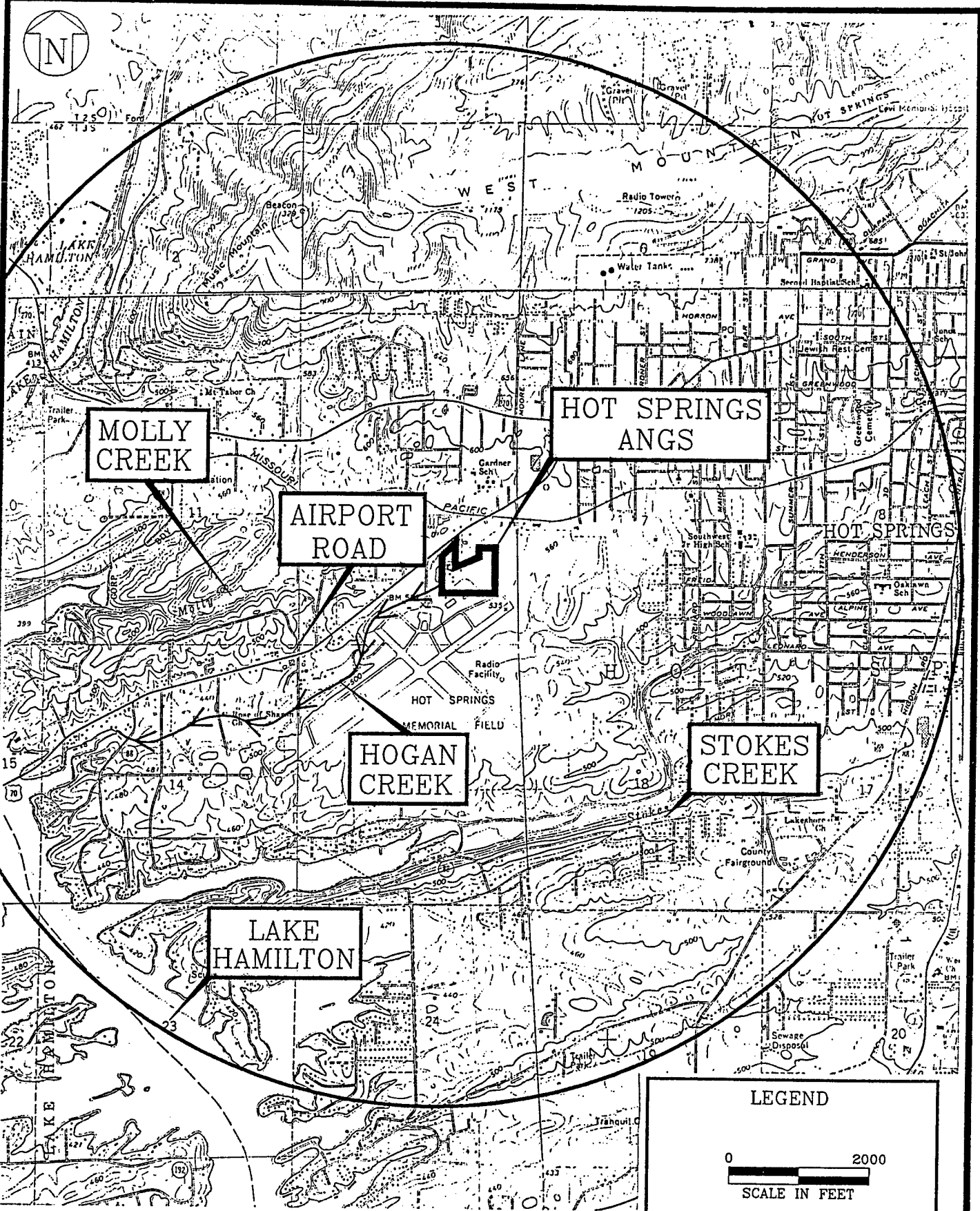


FIGURE A.2

DRAINAGE ROUTE AND OTHER  
SURFACE BODIES OF WATER  
WITHIN A 2-MILE RADIUS  
223rd CBCS, Hot Springs ANGS  
Hot Springs, Arkansas

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CORPORATION

JULY 1995

HOTSPRNG\WELL



**STATE OF ARKANSAS  
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION**

<b>A 1 Contractor Name &amp; Number:</b> <u>Meredith West Drilling</u> <b>C#</b> <u>1321</u>					<b>10</b> LOCATE WITH 'X' IN SECTION BELOW 
<b>2 Driller Name &amp; Number:</b> <u>Jack Meredith</u> <b>D#</b> <u>2039</u>					
<b>3 Pump Installer Name &amp; Number:</b> _____ <b>P#</b> _____					
<b>4 Date Well Completed:</b> <u>7-11-90</u> <b>New Well</b> <input checked="" type="checkbox"/> <b>Replace or Work-over</b> <input type="checkbox"/>					
<b>5 COUNTY</b> <u>CARLAND</u>	<b>6 FRACTION</b> <u>NE 1/4 of NE</u>	<b>7 SECTION</b> <u>14</u>	<b>8 TOWNSHIP</b> <u>35</u>	<b>9 RANGE</b> <u>20W</u>	
<b>LONGITUDE</b> _____° _____' _____"		<b>LATITUDE</b> _____° _____' _____"			

<b>B 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET</b> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;"><u>CLAY SHALE</u></td> <td style="width:20%;">FROM</td> <td style="width:20%;">TO</td> <td style="width:20%;"><u>0-14</u></td> </tr> <tr> <td><u>BLUE SHALE</u></td> <td>FROM</td> <td>TO</td> <td><u>14-30</u></td> </tr> <tr> <td><u>SHALE &amp; QUARTZ</u></td> <td>FROM</td> <td>TO</td> <td></td> </tr> <tr> <td><u>SEVERAL POCKETS OF CLAY &amp; QUARTZ</u></td> <td>FROM</td> <td>TO</td> <td><u>30 - 100 FT</u></td> </tr> <tr><td> </td><td>FROM</td><td>TO</td><td></td></tr> <tr><td> </td><td>FROM</td><td>TO</td><td></td></tr> <tr><td> </td><td>FROM</td><td>TO</td><td></td></tr> <tr><td> </td><td>FROM</td><td>TO</td><td></td></tr> </table> <b>ATTACH ADDITIONAL SHEETS IF NECESSARY</b>	<u>CLAY SHALE</u>	FROM	TO	<u>0-14</u>	<u>BLUE SHALE</u>	FROM	TO	<u>14-30</u>	<u>SHALE &amp; QUARTZ</u>	FROM	TO		<u>SEVERAL POCKETS OF CLAY &amp; QUARTZ</u>	FROM	TO	<u>30 - 100 FT</u>		FROM	TO			FROM	TO			FROM	TO			FROM	TO		<b>D 1 LAND OWNER OR OTHER CONTACT PERSON:</b> <b>NAME</b> <u>DAN CAIN</u> <b>STREET ADDRESS</b> <u>TREASURE ISLAND</u> <b>CITY</b> <u>NOT SPRINGS</u> <hr/> <b>2 CASING</b> FROM <u>0</u> TO <u>20</u> W/ <u>6</u> "ID FROM _____ TO _____ W/ _____ "ID <b>TYPE CASING:</b> <u>PUC</u> <hr/> <b>3 SCREEN</b> TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT <hr/> <b>4 GRAVEL PACK</b> FROM _____ FT TO _____ FT <hr/> <b>5 BACK FILLED WITH:</b> <u>CLAY SHALE</u> FROM <u>0</u> FT TO <u>10</u> FT <hr/> <b>6 SEALED WITH:</b> <u>CONCRETE</u> FROM <u>10</u> FT TO <u>20</u> FT FROM _____ FT TO _____ FT <hr/> <b>7 DISINFECTED WITH:</b> <u>CHLOROX</u> <hr/> <b>8 USE OF WELL:</b> DOMESTIC <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> IRRIGATION <input type="checkbox"/> MONITOR <input type="checkbox"/> LIVESTOCK/POULTRY <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL/GAS SUPPLY <input type="checkbox"/> SEMI-PUBLIC <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER _____ <hr/> (A/C HEATPUMP TYPE WELLS) SOURCE <input type="checkbox"/> RETURN <input type="checkbox"/> CLOSED LOOP <input type="checkbox"/> <hr/> <b>9 (For A/C only)</b> Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: _____ yes <input type="checkbox"/> no <input type="checkbox"/> <hr/> <b>10 (For A/C open-loop only)</b> Into what medium is water returned? <hr/> <b>11 REMARKS</b> <u>WELL WOULD NOT CLEAR WITH AIR. BAD ROCK FORMATION. INSTALLED INTER CASING</u> <hr/> <b>12 SIGNED</b> <u>Jack H. Meredith</u> <b>DATE</b> <u>7-11-90</u>
<u>CLAY SHALE</u>	FROM	TO	<u>0-14</u>																														
<u>BLUE SHALE</u>	FROM	TO	<u>14-30</u>																														
<u>SHALE &amp; QUARTZ</u>	FROM	TO																															
<u>SEVERAL POCKETS OF CLAY &amp; QUARTZ</u>	FROM	TO	<u>30 - 100 FT</u>																														
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<b>C PUMP REPORT</b>	
<b>1 TYPE PUMP:</b> SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/>	
<b>2 SETTING DEPTH:</b> _____ FEET	
<b>3 BRAND NAME AND SERIAL NUMBERS:</b> _____	
<b>4 RATED CAPACITY</b> _____ gallons per minute	
<b>5 TYPE LUBRICATION</b> _____	
<b>6 DROP PIPE OR COLUMN PIPE SIZE</b> _____	
<b>7 WIRE SIZE</b> _____	
<b>8 PRESSURE TANK ... SIZE, MAKE, MODEL</b> _____	
<b>9 DATE OF INSTALLATION OR REPAIR</b> _____	
<b>10 Is there an abandoned water well on the property?</b> _____	



## REPORT OF WATER WELL CONSTRUCTION

New Well ☒ Work-over Well ☐ Replacement Well ☐County GaOwner of Well Gerald WheelerContractor Fred A Smith c1014Driller Name and No. Fred A Smith D2270Date Well was Completed 6-10-851. Total Depth of Well 91 ft Ft.2. Water Producing Formation: From 30-60 Ft.w/ quartz To 88' Ft.3. Water Level Below Land Surface 20'4. Gallons per Hour 355. Well Disinfected with Purex6. Casing to 10 Ft.7. Cased with 6" Diameter PVC Casing8. Cemented from top Ft. to 10 Ft.

9. Use of Well: Domestic Irrigation Municipal Other

Well is near 270 W of Sunset Lodge Rd RoadSection 11 B B C Township T 35 Range R 20 WDirections for Reaching Well: 270 W - left onSunset Lodge Rd to left hand cornerat Nuckle Lane - Right 2 blocks 2nd N. onleft

Description and Color of Formation (sand, shale, sandstone, etc.)

Depths from in feet to

yellow sandstone top 10Bm sandstone 10 22Hard & soft shale 22 91w/ streaks of granite

Remarks:

Signed: Fred A Smith Date: 6-10-85

Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

## GEOLOGY COPY

## STATE OF ARKANSAS

## REPORT OF WATER WELL CONSTRUCTION

New Well ☒ Work-over Well ☐ Replacement Well ☐County BARLANDOwner of Well DICK RASNICContractor BILL White c1143Driller Name and No. DARRELL CASEY 2056Date Well was Completed 6-20-851. Total Depth of Well 160 Ft.2. Water Producing Formation: From 20 Ft.BLUESANDSTONE To 160 Ft.3. Water Level Below Land Surface 20 ft.4. Gallons per Hour 6605. Well Disinfected with H & H6. Casing to 20 Ft.7. Cased with 6" Diameter PVC Casing8. Cemented from 0 Ft. to 20 Ft.

9. Use of Well: Domestic Irrigation Municipal Other

Well is near SOUTH SHORE Rd RoadSection 33 Township T 35 Range 20 WDirections for Reaching Well: 70 WEST to Hwy#192 40 South Shore Rd.

Description and Color of Formation (sand, shale, sandstone, etc.)

Depths from in feet to

DIVER BURDEN 0-20BLUE SANDSTONE 20-160

Remarks:

Signed: Darrell Casey Date: 7/2/85

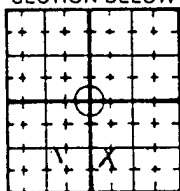
Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

## GEOLOGY COPY



STATE OF ARKANSAS  
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

<b>A</b> Contractor Name & Number: <u>BILL WHITE</u> C# <u>1143</u> 2 Driller Name & Number: <u>BILL WHITE</u> D# <u>2200</u> 3 Pump Installer Name & Number: <u>DARRELL CASEY</u> P# <u>4201</u> 4 Date Well Completed: <u>1-30-91</u> New Well <input checked="" type="checkbox"/> Replace or Work-over <input type="checkbox"/>		10" LOCATE WITH 'X' IN SECTION BELOW 																							
5 COUNTY <u>BARLAND</u> 6 FRACTION <u>1/4</u> of 7 SECTION <u>8</u> 8 TOWNSHIP <u>T 35</u> 9 RANGE <u>19 W</u> LONGITUDE 11 _____° _____' _____" LATITUDE 11 _____° _____' _____"																									
<b>B1</b> DESCRIPTION OF FORMATION: DEPTHS IN FEET <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td>Top Soil Red Clay</td> <td>0</td> <td>20</td> </tr> <tr> <td>Gray Granet</td> <td>25</td> <td>155</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>				FROM	TO	Top Soil Red Clay	0	20	Gray Granet	25	155														
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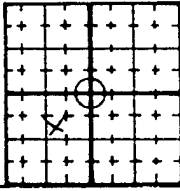

<b>B1</b> ATTACH ADDITIONAL SHEETS IF NECESSARY 2 TOTAL DEPTH OF WELL <u>155</u> ft 3 DEPTHS TO WATER PRODUCING FORMATIONS <u>145</u> ft 4 STATIC WATER LEVEL <u>30</u> ft below land surface 5 YIELD <u>15</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr 6 DIAMETER OF BORE HOLE <u>1 1/4</u> IN	<b>D1</b> LAND OWNER OR OTHER CONTACT PERSON: NAME <u>GREG NUTT</u> STREET ADDRESS <u>RT 1 Box 379-5</u> CITY <u>HOT SPRINGS, Ark 71913</u> 2 CASING FROM <u>0</u> TO <u>35</u> W/ <u>6</u> "ID FROM _____ TO _____ W/ _____ "ID TYPE CASING: <u>PVC</u> 3 SCREEN TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT 4 GRAVEL PACK FROM _____ FT TO _____ FT 5 BACK FILLED WITH: <u>Gray Granet</u> FROM <u>0</u> FT TO <u>20</u> FT 6 SEALED WITH: <u>Cement</u> FROM <u>20</u> FT TO <u>35</u> FT FROM _____ FT TO _____ FT 7 DISINFECTED WITH: <u>H+H</u> 8 USE OF WELL: DOMESTIC <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> IRRIGATION <input type="checkbox"/> MONITOR <input type="checkbox"/> LIVESTOCK/POULTRY <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL/GAS SUPPLY <input type="checkbox"/> SEMI-PUBLIC <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER _____ (A/C HEATPUMP TYPE WELLS) SOURCE <input type="checkbox"/> RETURN <input type="checkbox"/> CLOSED LOOP <input type="checkbox"/> 9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: _____ yes <input type="checkbox"/> no <input type="checkbox"/> 10 (For A/C open-loop only) Into what medium is water returned? 11 REMARKS 12 SIGNED <u>Bill White</u> DATE <u>2/5/91</u>
--	---

<b>C PUMP REPORT</b>	
1 TYPE PUMP: SUBMERSIBLE <input checked="" type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/>	
2 SETTING DEPTH: <u>150</u> FEET	
3 BRAND NAME AND SERIAL NUMBERS: <u>PLUM D Fos 1/2 HP 220 Volt</u>	
4 RATED CAPACITY <u>10</u> gallons per minute	
5 TYPE LUBRICATION _____	
6 DROP PIPE OR COLUMN PIPE SIZE <u>1" PVC</u>	
7 WIRE SIZE <u>12 x 2</u>	
8 PRESSURE TANK ... SIZE, MAKE, MODEL <u>WELL RITE</u>	
9 DATE OF INSTALLATION OR REPAIR <u>1-31-91</u>	
10 Is there an abandoned water well on the property?	



**STATE OF ARKANSAS  
REPORT OF WATER WELL  
CONSTRUCTION**

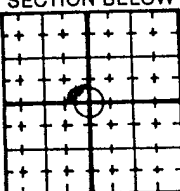

1 CONTRACTOR Name and number <u>BLE L Drilling Co</u> c. <u>1023</u>	
DRILLER Name and number <u>Ralph Aldrich</u> d. <u>2079</u>	
2 LOCATION / IDENTIFICATION DATE WELL COMPLETED <u>11-13-87</u> NEW WELL <input type="checkbox"/> WORK-OVER <input type="checkbox"/>	
(a) COUNTY <u>Garland</u>	(b) FRACTION <u>NE 1/4 of SW 1/4 of</u>
(c) SECTION <u>8</u>	(d) TOWNSHIP <u>3 S</u>
(e) RANGE <u>19 W</u>	
(f) LOCATE WITH 'X' IN SECTION BELOW 	(g) SKETCH MAP 
(h) OWNER OF WELL: <u>Chuck Stotts</u> NAME <u>6805 Central Ave.</u> STREET ADDRESS <u>Hts Springs AR.</u> CITY	
(i) OPERATOR: NAME STREET ADDRESS CITY	
3 DESCRIPTION OF FORMATION: DEPTHS IN FEET	9 CASING FROM <u>0</u> TO <u>22</u> W/ <u>6</u> "ID FROM TO W/ "ID TYPE CASING <u>PVC</u>
<u>RED CLAY</u> 0 FROM TO <u>16</u>	10 SCREEN: TYPE DIA SLOT/GA SET BETWEEN ft and ft TYPE DIA SLOT/GA SET BETWEEN ft and ft
<u>GRAY SLATE</u> 16 90	
	11 GRAVEL PACK FROM ft and ft
	12 BACK FILLED WITH FROM ft to ft
	13 SEALED WITH <u>Cement</u> FROM <u>2</u> ft to <u>22</u> ft FROM ft to ft
	14 DISINFECTED WITH: <u>70% Chlorine</u>
	15 USE OF WELL: SOURCE WELL <input type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/>
	16 PURPOSE: DOMESTIC <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/>
ATTACH ADDITIONAL SHEETS IF NECESSARY	17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES <input type="checkbox"/> NO <input type="checkbox"/> (IF YES NAME USE)
4 TOTAL DEPTH OF WELL <u>90</u> ft	18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?
5 WATER PRODUCING FORMATION? <u>80</u>	19 REMARKS:
6 STATIC WATER LEVEL <u>30</u> Ft below land surface	
7 WATER PRODUCTION RATE WELL PRODUCTS <u>15</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr	20 SIGNED <u>Larry L. Hodges</u> DATE <u>11-16-87</u>
8 DIAMETER OF BORE HOLE <u>5 7/8</u> IN	

AWD-4 JAN 1986 Committee on Waterwell Construction, 2975 South Pine, Little Rock, AR 72204

GEOLOGY COPY



STATE OF ARKANSAS  
REPORT OF WATER WELL  
CONSTRUCTION

1 CONTRACTOR Name and number <u>Meredith &amp; West</u> c. <u>1321</u>	
DRILLER Name and number <u>JACK MEREDITH</u> d. <u>2039</u>	
2 LOCATION / IDENTIFICATION DATE WELL COMPLETED <u>7-7-89</u> NEW WELL <input checked="" type="checkbox"/> WORK-OVER <input type="checkbox"/>	
(a) COUNTY <u>GARLAND</u>	(b) FRACTION <u>SE</u> 1/4 of <u>NW</u> 1/4 of
(c) SECTION <u>5</u>	(d) TOWNSHIP <u>3S</u>
(e) RANGE <u>19W</u>	
(f) LOCATE WITH 'X' IN SECTION BELOW 	(g) SKETCH MAP 
(h) OWNER OF WELL: <u>ARM. GAME LEISH</u> NAME STREET ADDRESS <u>RT 1 Box 477</u> CITY <u>NOT SPRINGS</u>	
(i) OPERATOR: <u>JACK MEREDITH</u> NAME STREET ADDRESS CITY	
3 DESCRIPTION OF FORMATION: DEPTHS IN FEET	
<u>CLAY SHALE</u>	FROM <u>0-8</u>
<u>SOFT BLUE SHALE</u>	<u>8-15</u>
<u>HARD SHALE</u>	<u>15-300</u>
9 CASING FROM <u>0</u> TO <u>20</u> WI <u>PVC</u> ID <u>6 IN</u> FROM TO WI ID TYPE CASING <u>PVC</u>	
10 SCREEN: TYPE DIA SLOT/GA SET BETWEEN ft and ft TYPE DIA SLOT/GA SET BETWEEN ft and ft	
11 GRAVEL PACK FROM ft and ft	
12 BACK FILLED WITH FROM ft to ft	
13 SEALED WITH <u>concrete</u> FROM <u>10</u> ft to <u>20</u> ft FROM ft to ft	
14 DISINFECTED WITH: <u>CLOROX</u>	
15 USE OF WELL: SOURCE WELL <input checked="" type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/>	
16 PURPOSE: DOMESTIC <input type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input checked="" type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/>	
17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES <input type="checkbox"/> NO <input type="checkbox"/> (IF YES NAME USE)	
18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?	
19 REMARKS: <u>Y</u>	
20 SIGNED <u>Jack Meredith</u> DATE <u>9-15-89</u>	
4 TOTAL DEPTH OF WELL <u>300</u> ft	
5 WATER PRODUCING FORMATION? <u>175</u>	
6 STATIC WATER LEVEL <u>155</u> Ft below land surface	
7 YIELD <u>175</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr	
8 DIAMETER OF BORE HOLE: <u>6</u> IN	

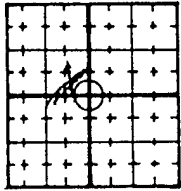
NOT RECORDED BY AWD JAN 1988

Arkansas Waterwell Construction Commission 2915 South Pine, Little Rock, AR 72204

GEOLOGY COPY



**STATE OF ARKANSAS**  
**REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION**

<b>A</b> 1 Contractor Name & Number: <u>Meredith West</u> C# <u>1321</u> 2 Driller Name & Number: <u>P Meredith</u> D# <u>2039</u> 3 Pump Installer Name & Number: _____ P# _____ 4 Date Well Completed: <u>4-3-89</u> New Well <input checked="" type="checkbox"/> Replace or Work-over <input type="checkbox"/>		10 LOCATE WITH 'X' IN SECTION BELOW 					
			5 COUNTY	6 FRACTION	7 SECTION	8 TOWNSHIP	9 RANGE
				<u>SE</u> 1/4 of <u>NW</u> 1/4 of	<u>5</u>	<u>33</u>	<u>19W</u>
			LONGITUDE		LATITUDE		
11 _____ ° _____ ' _____ "		11 _____ ° _____ ' _____ "					

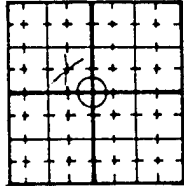
<b>B</b> 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td><u>Clay</u></td> <td><u>0</u></td> <td><u>8</u></td> </tr> <tr> <td><u>Clay shale</u></td> <td><u>8</u></td> <td><u>12</u></td> </tr> <tr> <td><u>Blue shale</u></td> <td><u>12</u></td> <td><u>220</u></td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		FROM	TO	<u>Clay</u>	<u>0</u>	<u>8</u>	<u>Clay shale</u>	<u>8</u>	<u>12</u>	<u>Blue shale</u>	<u>12</u>	<u>220</u>																<b>D</b> 1 LAND OWNER OR OTHER CONTACT PERSON: NAME <u>Ark Game &amp; Fish</u> STREET ADDRESS <u>RT 1 Box 477</u> CITY <u>Hot Springs 71913</u> 2 CASING FROM <u>0</u> TO <u>20</u> W/ <u>6</u> "ID FROM _____ TO _____ W/ _____ "ID TYPE CASING: <u>PVC</u> 3 SCREEN TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT 4 GRAVEL PACK FROM _____ FT TO _____ FT 5 BACK FILLED WITH: _____ FROM _____ FT TO _____ FT 6 SEALED WITH: <u>concrete</u> FROM <u>10</u> FT TO <u>20</u> FT FROM _____ FT TO _____ FT 7 DISINFECTED WITH: <u>Clorox</u> 8 USE OF WELL: DOMESTIC <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> IRRIGATION <input type="checkbox"/> MONITOR <input type="checkbox"/> LIVESTOCK/POULTRY <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL/GAS SUPPLY <input type="checkbox"/> SEMI-PUBLIC <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER _____ (A/C HEATPUMP TYPE WELLS) SOURCE <input type="checkbox"/> RETURN <input type="checkbox"/> CLOSED LOOP <input type="checkbox"/> 9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: _____ yes <input type="checkbox"/> no <input type="checkbox"/> 10 (For A/C open-loop only) Into what medium is water returned? 11 REMARKS 12 SIGNED <u>P Meredith</u> DATE _____
	FROM	TO																										
<u>Clay</u>	<u>0</u>	<u>8</u>																										
<u>Clay shale</u>	<u>8</u>	<u>12</u>																										
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<b>C</b> PUMP REPORT	
1 TYPE PUMP: SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/>	
2 SETTING DEPTH: _____ FEET	
3 BRAND NAME AND SERIAL NUMBERS: _____	
4 RATED CAPACITY _____ gallons per minute	
5 TYPE LUBRICATION _____	
6 DROP PIPE OR COLUMN PIPE SIZE _____	
7 WIRE SIZE _____	
8 PRESSURE TANK SIZE, MAKE, MODEL _____	
9 DATE OF INSTALLATION OR REPAIR _____	
10 Is there an abandoned water well on the property? _____	

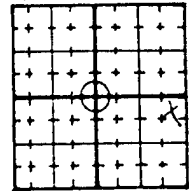


**STATE OF ARKANSAS  
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION**

<b>A</b> 1 Contractor Name & Number: <u>Meredith &amp; West Drilling</u> C# <u>1321</u> 2 Driller Name & Number: <u>Jack Meredith</u> D# <u>2039</u> 3 Pump Installer Name & Number: _____ P# _____ 4 Date Well Completed: <u>2-4-93</u> New Well <input type="checkbox"/> Replace or Work-over <input type="checkbox"/>					10 LOCATE WITH 'X' IN SECTION BELOW 																										
5 COUNTY <u>Garland</u> 6 FRACTION <u>SE 1/4 of NW 1/4</u> 7 SECTION <u>3</u> 8 TOWNSHIP <u>3-S</u> 9 RANGE <u>20N</u> LONGITUDE _____ LATITUDE _____ 11 _____ ° _____ ' _____ " 11 _____ ° _____ ' _____ "																															
<b>B</b> 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td><u>CLAY</u></td> <td><u>0</u></td> <td><u>3</u></td> </tr> <tr> <td><u>11 shale</u></td> <td><u>3</u></td> <td><u>37</u></td> </tr> <tr> <td><u>Hard S. F. G. Shale</u></td> <td><u>37</u></td> <td><u>160</u></td> </tr> <tr> <td><u>mixed</u></td> <td></td> <td></td> </tr> <tr><td> </td><td></td><td></td></tr> <tr><td> </td><td></td><td></td></tr> <tr><td> </td><td></td><td></td></tr> <tr><td> </td><td></td><td></td></tr> </tbody> </table>							FROM	TO	<u>CLAY</u>	<u>0</u>	<u>3</u>	<u>11 shale</u>	<u>3</u>	<u>37</u>	<u>Hard S. F. G. Shale</u>	<u>37</u>	<u>160</u>	<u>mixed</u>													
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<u>mixed</u>																															
<b>D</b> 1 LAND OWNER OR OTHER CONTACT PERSON: NAME <u>Curtis Cash</u> STREET ADDRESS <u>Thornton Ferry Rd</u> CITY <u>Hot Springs</u> 2 CASING FROM <u>0</u> TO <u>40</u> W/ <u>6"</u> "ID FROM _____ TO _____ W/ _____ "ID TYPE CASING: <u>PVC</u> 3 SCREEN TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT 4 GRAVEL PACK FROM _____ FT TO _____ FT 5 BACK FILLED WITH: <u>shale</u> FROM <u>0</u> FT TO <u>30</u> FT 6 SEALED WITH: <u>concrete</u> FROM <u>30</u> FT TO <u>40</u> FT FROM _____ FT TO _____ FT 7 DISINFECTED WITH: <u>Chlorine Tabs</u> 8 USE OF WELL: DOMESTIC <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> IRRIGATION <input type="checkbox"/> MONITOR <input type="checkbox"/> LIVESTOCK/POULTRY <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL/GAS SUPPLY <input type="checkbox"/> SEMI-PUBLIC <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER _____ (A/C HEATPUMP TYPE WELLS) SOURCE <input type="checkbox"/> RETURN <input type="checkbox"/> CLOSED LOOP <input type="checkbox"/> 9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: _____ yes <input type="checkbox"/> no <input type="checkbox"/> 10 (For A/C open-loop only) Into what medium is water returned? 11 REMARKS 12 SIGNED <u>[Signature]</u> DATE <u>2-4-93</u>																															
<b>C</b> PUMP REPORT 1 TYPE PUMP: SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/> 2 SETTING DEPTH: _____ FEET 3 BRAND NAME AND SERIAL NUMBERS: _____ 4 RATED CAPACITY _____ gallons per minute 5 TYPE LUBRICATION _____ 6 DROP PIPE OR COLUMN PIPE SIZE _____ 7 WIRE SIZE _____ 8 PRESSURE TANK ... SIZE, MAKE, MODEL _____ 9 DATE OF INSTALLATION OR REPAIR _____ 10 Is there an abandoned water well on the property? _____																															



STATE OF ARKANSAS  
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

<b>A</b> 1 Contractor Name & Number: <u>Meredith &amp; West</u> C# <u>1321</u> 2 Driller Name & Number: <u>J Meredith</u> D# <u>2039</u> 3 Pump Installer Name & Number: _____ P# _____ 4 Date Well Completed: <u>3-2-89</u> New Well <input checked="" type="checkbox"/> Replace or Work-over <input type="checkbox"/>		10 LOCATE WITH 'X' IN SECTION BELOW 
5 COUNTY <u>CALLADO</u> 6 EREACTION <u>NE 1/4 of NW 1/4 of</u> 7 SECTION <u>3</u> 8 TOWNSHIP <u>35</u> 9 RANGE <u>R20W</u> LONGITUDE _____ LATITUDE _____ 11 _____		

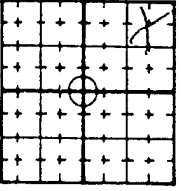
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CLAY	FROM 0	TO 5											
CLAY SHALE	5	12											
BLUE SHALE	12	80											
SHALE LAURET	80	100											

<b>C</b> PUMP REPORT	
1 TYPE PUMP: SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/>	
2 SETTING DEPTH: FEET	
3 BRAND NAME AND SERIAL NUMBERS:	
4 RATED CAPACITY gallons per minute	
5 TYPE LUBRICATION	
6 DROP PIPE OR COLUMN PIPE SIZE	
7 WIRE SIZE	
8 PRESSURE TANK ... SIZE, MAKE, MODEL	
9 DATE OF INSTALLATION OR REPAIR	
10 Is there an abandoned water well on the property?	



**STATE OF ARKANSAS**  
**REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION**

<b>A 1</b> Contractor Name & Number: <u>Mercedith West</u> C# <u>1321</u>		10 LOCATE WITH 'X' IN SECTION BELOW 		
2 Driller Name & Number: <u>Jack Mercedith</u> D# <u>2039</u>				
3 Pump Installer Name & Number: _____ P# _____				
4 Date Well Completed: <u>8-16-91</u> New Well <input checked="" type="checkbox"/> Replace or Work-over <input type="checkbox"/>				
5 COUNTY <u>Garland</u>	6 FRACTION <u>NE 1/4 of NE 1/4</u>	7 SECTION <u>1</u>	8 TOWNSHIP <u>3</u>	9 RANGE <u>20</u>
11 _____ ° _____ ' _____ "		LATITUDE 11 _____ ° _____ ' _____ "		

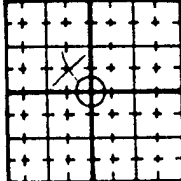
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	FROM	TO														
<u>clay</u>	<u>0</u>	<u>16</u>														
<u>shale</u>	<u>16</u>	<u>23</u>														
<u>gravel/sand</u>	<u>23</u>	<u>24</u>														
<u>black shale</u>	<u>24</u>	<u>80</u>														

<b>C PUMP REPORT</b>	
1 TYPE PUMP: SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/>	
2 SETTING DEPTH: _____ FEET	
3 BRAND NAME AND SERIAL NUMBERS:	
4 RATED CAPACITY _____ gallons per minute	
5 TYPE LUBRICATION	
6 DROP PIPE OR COLUMN PIPE SIZE	
7 WIRE SIZE	
8 PRESSURE TANK . . . SIZE, MAKE, MODEL	
9 DATE OF INSTALLATION OR REPAIR	
10 Is there an abandoned water well on the property?	



**STATE OF ARKANSAS  
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION**

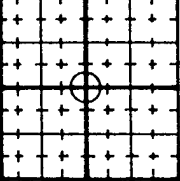
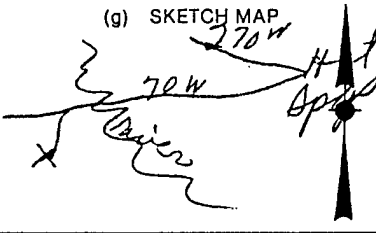
<b>A</b> 1 Contractor Name & Number: <u>Meredith West Drilling</u> C# <u>1321</u> 2 Driller Name & Number: <u>Jack Meredith</u> D# <u>2039</u> 3 Pump Installer Name & Number: _____ P# _____ 4 Date Well Completed: <u>1-27-93</u> New Well <input checked="" type="checkbox"/> Replace or Work-over <input type="checkbox"/>				10 LOCATE WITH 'X' IN SECTION BELOW 					
5 COUNTY: <u>Garland</u>		6 FRACTION: <u>SE</u> 1/4 of <u>NW</u> 1/4 of <u>15</u>		7 SECTION: <u>3-5</u>		8 TOWNSHIP: <u>20N</u>		9 RANGE: <u>20W</u>	
LONGITUDE: 11 _____ ° _____ ' _____ "				LATITUDE: 11 _____ ° _____ ' _____ "					

<b>B</b> 1 DESCRIPTION OF FORMATION: DEPTHS IN FEET <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:60%;"></th> <th style="width:20%; text-align: center;">FROM</th> <th style="width:20%; text-align: center;">TO</th> </tr> </thead> <tbody> <tr> <td><u>Clay</u></td> <td style="text-align: center;"><u>0</u></td> <td style="text-align: center;"><u>14</u></td> </tr> <tr> <td><u>" Shale</u></td> <td style="text-align: center;"><u>14</u></td> <td style="text-align: center;"><u>18</u></td> </tr> <tr> <td><u>Blue Shale</u></td> <td style="text-align: center;"><u>14</u></td> <td style="text-align: center;"><u>120</u></td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		FROM	TO	<u>Clay</u>	<u>0</u>	<u>14</u>	<u>" Shale</u>	<u>14</u>	<u>18</u>	<u>Blue Shale</u>	<u>14</u>	<u>120</u>																<b>D</b> 1 LAND OWNER OR OTHER CONTACT PERSON: NAME <u>JACK BROWN</u> STREET ADDRESS <u>Glazepore Rd</u> CITY <u>Hot Springs</u> <hr/> 2 CASING FROM <u>0</u> TO <u>20</u> W/ <u>6"</u> "ID FROM TO W/ "ID TYPE CASING: <u>PVC</u> <hr/> 3 SCREEN TYPE: _____ DIA _____ SLOT/GA _____ SET FROM FT TO FT TYPE: _____ DIA _____ SLOT/GA _____ SET FROM FT TO FT <hr/> 4 GRAVEL PACK FROM _____ FT TO _____ FT <hr/> 5 BACK FILLED WITH: <u>Shale</u> FROM <u>0</u> FT TO <u>10</u> FT <hr/> 6 SEALED WITH: <u>Concrete</u> FROM <u>10</u> FT TO <u>20</u> FT FROM FT TO FT <hr/> 7 DISINFECTED WITH: <u>Chlorine Tablets</u> <hr/> 8 USE OF WELL: DOMESTIC <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> IRRIGATION <input type="checkbox"/> MONITOR <input type="checkbox"/> LIVESTOCK/POULTRY <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL/GAS SUPPLY <input type="checkbox"/> SEMI-PUBLIC <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER _____ <hr/> (A/C HEATPUMP TYPE WELLS) SOURCE <input type="checkbox"/> RETURN <input type="checkbox"/> CLOSED LOOP <input type="checkbox"/> <hr/> 9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: _____ yes <input type="checkbox"/> no <input type="checkbox"/> <hr/> 10 (For A/C open-loop only) Into what medium is water returned? <hr/> 11 REMARKS <hr/> 12 SIGNED <u>Jack Meredith</u> DATE <u>4-13-93</u>
	FROM	TO																										
<u>Clay</u>	<u>0</u>	<u>14</u>																										
<u>" Shale</u>	<u>14</u>	<u>18</u>																										
<u>Blue Shale</u>	<u>14</u>	<u>120</u>																										

<b>C</b> PUMP REPORT 1 TYPE PUMP: SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/> 2 SETTING DEPTH: _____ FEET 3 BRAND NAME AND SERIAL NUMBERS: _____ 4 RATED CAPACITY _____ gallons per minute 5 TYPE LUBRICATION _____ 6 DROP PIPE OR COLUMN PIPE SIZE _____ 7 WIRE SIZE _____ 8 PRESSURE TANK ... SIZE, MAKE, MODEL _____ 9 DATE OF INSTALLATION OR REPAIR _____ 10 Is there an abandoned water well on the property? _____	
--	--



**STATE OF ARKANSAS  
REPORT OF WATER WELL  
CONSTRUCTION**

1 CONTRACTOR Name and number <u>Fred A. Smith</u> DRILLER Name and number <u>Fred A. Smith</u>		C. <u>1014</u> D. <u>2270</u>													
2 LOCATION / IDENTIFICATION		DATE WELL COMPLETED <u>6-23-87</u> NEW WELL <input checked="" type="checkbox"/> WORK-OVER <input type="checkbox"/>													
(a) COUNTY <u>ga</u>	(b) FRACTION <u>1/4</u> of	(c) SECTION <u>15 DDD</u>	(d) TOWNSHIP <u>T 35</u>												
		(e) RANGE <u>R 20 W</u>													
(f) LOCATE WITH 'X' IN SECTION BELOW 		(g) SKETCH MAP 													
		(h) OWNER OF WELL: <u>Harold Lillard</u> NAME <u>Rt 4 Box 620</u> STREET ADDRESS CITY <u>Hot Springs, Ar. 71913</u>													
		(i) OPERATOR: <u>Fred A. Smith</u> NAME <u>Rt 2 Box 514</u> STREET ADDRESS CITY <u>Mountain Pine Ar. 71956</u>													
3 DESCRIPTION OF FORMATION: DEPTHS IN FEET		9 CASING FROM <u>Top</u> TO <u>12" WI 6"</u> "ID FROM TO WI "ID TYPE CASING <u>PVC</u>													
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">Red clay top</td> <td>FROM</td> <td>TO 8'</td> </tr> <tr> <td>Bm. sandrock 8'</td> <td></td> <td>20'</td> </tr> <tr> <td>Hard shale 1/5 of 20'</td> <td></td> <td>114'</td> </tr> <tr> <td>granite</td> <td></td> <td></td> </tr> </table>		Red clay top	FROM	TO 8'	Bm. sandrock 8'		20'	Hard shale 1/5 of 20'		114'	granite			10 SCREEN: <u>Closed system</u> TYPE DIA SLOT/GA SET BETWEEN ft and ft TYPE DIA SLOT/GA SET BETWEEN ft and ft	
Red clay top	FROM	TO 8'													
Bm. sandrock 8'		20'													
Hard shale 1/5 of 20'		114'													
granite															
		11 GRAVEL PACK FROM ft and ft													
		12 BACK FILLED WITH FROM ft to ft													
		13 SEALED WITH FROM ft to ft													
		14 DISINFECTED WITH <u>Purex</u>													
		15 USE OF WELL: SOURCE WELL <input type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/>													
		16 PURPOSE: DOMESTIC <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/>													
ATTACH ADDITIONAL SHEETS IF NECESSARY		17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES <input type="checkbox"/> NO <input type="checkbox"/> (IF YES NAME USE)													
4 TOTAL DEPTH OF WELL <u>114</u> ft		18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?													
5 WATER PRODUCING FORMATION? <u>w/g</u>		19 REMARKS:													
6 STATIC WATER LEVEL <u>25'</u> Ft below land surface		20 SIGNED <u>Fred A. Smith</u> DATE <u>7-15-87</u>													
7 WATER PRODUCTION RATE WELL PRODUCTS <u>18</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr															
8 DIAMETER OF BORE HOLE <u>6"</u> IN															

AWD-4 JAN 1986 Committee on Waterwell Construction, 2915 South Pine, Little Rock, AR 72204

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10  
LOCATE WITH 'X' IN  
SECTION BELOW

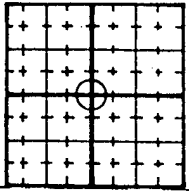

AWD-7 JAN 89 Arkansas Water Well Construction Commission, One Capitol Mall, Suite 2-C, Little Rock, AR 72201  
ACI--5945

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STATE OF KANSAS  
REPORT OF WATER WELL  
CONSTRUCTION

X  
w.d. ...  
detail

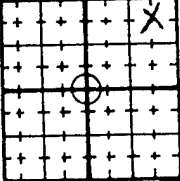
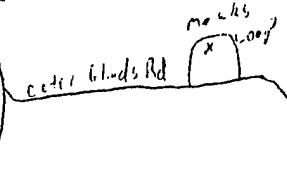
1 CONTRACTOR Name and number <u>Herb Beantling County Water Service</u> c. <u>1080</u>	
DRILLER Name and number <u>Herb Beantling</u> d. <u>2146</u>	
2 LOCATION / IDENTIFICATION DATE WELL COMPLETED <u>2-11-87</u> NEW WELL <input checked="" type="checkbox"/> WORK-OVER <input type="checkbox"/>	
(a) COUNTY <u>Gorland</u>	(b) FRACTION <u>1/4</u> of (c) SECTION <u>15</u> (d) TOWNSHIP <u>3 N.</u> (e) RANGE <u>20 W.</u>
(f) LOCATE WITH 'X' IN SECTION BELOW 	(g) SKETCH MAP 
(h) OWNER OF WELL: <u>Rusty Beantling</u> NAME STREET ADDRESS <u>Rt. 4</u> CITY <u>Flat Springs, Ark.</u>	
(i) OPERATOR: NAME STREET ADDRESS CITY	
3 DESCRIPTION OF FORMATION: DEPTHS IN FEET	9 CASING FROM TO <u>21</u> W/ <u>6</u> "ID FROM TO W/ "ID <u>PRC</u>
FROM TO	TYPE CASING
<u>Brown shale</u> 0 10	10 SCREEN: DIA SLOT/GA TYPE SET BETWEEN ft TYPE SET BETWEEN DIA ft TYPE SET BETWEEN ft
<u>Blue shale</u> 10 100	11 GRAVEL PACK FROM ft and ft
	12 BACK FILLED WITH FROM ft to ft
	13 SEALED WITH <u>Cement</u> FROM <u>10</u> ft to <u>21</u> ft FROM ft to ft
	14 DISINFECTED WITH:
	15 USE OF WELL: SOURCE WELL <input checked="" type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/>
	16 PURPOSE: DOMESTIC <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/>
ATTACH ADDITIONAL SHEETS IF NECESSARY	17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES <input type="checkbox"/> NO <input type="checkbox"/>
4 TOTAL DEPTH OF WELL <u>100</u> ft	18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?
5 WATER PRODUCING FORMATION? <u>70 to 90 ft.</u>	19 REMARKS:
6 STATIC WATER LEVEL <u>15</u> Ft below land surface	20 SIGNED <u>Herb Beantling</u> DATE <u>3-6-87</u>
7 WATER PRODUCTION RATE WELL PRODUCTS <u>1200</u> gallons per <input type="checkbox"/> min <input checked="" type="checkbox"/> hr	
8 DIAMETER OF BORE HOLE <u>6</u> IN	

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**STATE OF ARKANSAS  
REPORT OF WATER WELL  
CONSTRUCTION**

1 CONTRACTOR Name and number <u>BILL WHITE</u> DRILLER Name and number <u>BILLY C. WHITE</u>		C. <u>1143</u> D. <u>2299</u>																																																	
2 LOCATION / IDENTIFICATION		DATE WELL COMPLETED <u>4-10-87</u> NEW WELL <input checked="" type="checkbox"/> WORK-OVER <input type="checkbox"/>																																																	
(a) COUNTY <u>ARKLAND</u>	(b) FRACTION <u>1/4</u> of	(c) SECTION <u>35</u> of	(d) TOWNSHIP <u>T 2 S</u>																																																
(f) LOCATE WITH 'X' IN SECTION BELOW <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;">             (g) SKETCH MAP   </div> </div>		(h) OWNER OF WELL: <u>CHARROLL WEEKS</u> NAME STREET ADDRESS <u>PO Box</u> CITY <u>HOTSPRINGS, Ark 71914</u> (i) OPERATOR: NAME STREET ADDRESS CITY																																																	
3 DESCRIPTION OF FORMATION:		9 CASING FROM <u>0</u> TO <u>21</u> WI <u>6</u> "ID FROM TO WI "ID TYPE CASING <u>PVC</u>																																																	
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">DEPTHS IN FEET</th> </tr> <tr> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td>Top Soil Red Clay</td> <td>0 21</td> </tr> <tr> <td>Black Shale Quartz</td> <td>21 105</td> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>		DEPTHS IN FEET		FROM	TO	Top Soil Red Clay	0 21	Black Shale Quartz	21 105																																									10 SCREEN: TYPE DIA ft SLOT/GA SET BETWEEN ft and ft TYPE DIA ft SLOT/GA SET BETWEEN ft and ft 11 GRAVEL PACK FROM ft and ft 12 BACK FILLED WITH FROM 0 ft to 11 ft <u>Black Shale</u> 13 SEALED WITH FROM 11 ft to 21 ft <u>cement</u> 14 DISINFECTED WITH: <u>H + H</u> 15 USE OF WELL: SOURCE WELL <input type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/> 16 PURPOSE: DOMESTIC <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/> 17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES <input type="checkbox"/> NO <input type="checkbox"/> (IF YES NAME USE) 18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED? 19 REMARKS:	
DEPTHS IN FEET																																																			
FROM	TO																																																		
Top Soil Red Clay	0 21																																																		
Black Shale Quartz	21 105																																																		
4 TOTAL DEPTH OF WELL <u>105</u> ft		20 SIGNED <u>Bill White</u> DATE <u>4/28/87</u>																																																	
5 WATER PRODUCING FORMATION? <u>Black Shale Quartz</u>		7 WATER PRODUCTION RATE WELL PRODUCTS <u>2</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr																																																	
6 STATIC WATER LEVEL <u>25</u> Ft below land surface		8 DIAMETER OF BORE HOLE <u>6</u> IN																																																	



STATE OF ARKANSAS  
REPORT OF WATER WELL CONSTRUCTION

New Well ☒ Work-over Well \_\_\_\_\_ Replacement Well \_\_\_\_\_  
 Owner of Well Ralph Hutchinson  
 Contractor Frank Smith C 1014  
 Driller Name and No. Frank A. Smith D3270  
 Date Well was Completed 8-25-84  
 Well is near Cedar Bluffs County Joe (in which well is located)  
 Section 36A C d Township 12 S Range R20 W  
 Directions for Reaching Well: \_\_\_\_\_ (use permanent landmark)

1. Total Depth of Well 75' Ft.  
 2. Water Producing Formation: W/guarry From 30' Ft. To 62' Ft.  
 3. Water Level Below Land Surface 12'  
 4. Gallons per Hour 18 Gals/min  
 5. Well Disinfected with Formal  
 6. Casing to 10' Ft.  
 7. Cased with 6" P.S. Diameter 12.5" Casing  
 8. Cemented from top Ft. to 10' Ft.  
 9. Use of Well: Domestic Irrigation Municipal Other

Remarks: \_\_\_\_\_  
 Signed Frank Smith Date 10-27-84

Form No. AWD-3  
 Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

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**STATE OF ARKANSAS  
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION**

A1 Contractor Name & Number: <u>Meredith &amp; West</u> C# <u>1321</u>		10 LOCATE WITH 'X' IN SECTION BELOW 		
2 Driller Name & Number: <u>Jack Meredith</u> D# <u>2039</u>				
3 Pump Installer Name & Number: _____ P# _____				
4 Date Well Completed: <u>4-10-91</u> New Well <input checked="" type="checkbox"/> Replace or Work-over <input type="checkbox"/>				
5 COUNTY <u>CARLAND</u>	6 FRACTION <u>NE 1/4 of NE 1/4 of</u>	7 SECTION <u>35</u>	8 TOWNSHIP <u>25</u>	9 RANGE <u>20</u>
11 _____° _____' _____" LONGITUDE		11 _____° _____' _____" LATITUDE		

<b>B1 DESCRIPTION OF FORMATION: DEPTHS IN FEET</b> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td><u>CLAY</u></td> <td><u>0</u></td> <td><u>10</u></td> </tr> <tr> <td><u>CLAY shale</u></td> <td><u>10</u></td> <td><u>16</u></td> </tr> <tr> <td><u>Shale</u></td> <td><u>16</u></td> <td><u>42</u></td> </tr> <tr> <td><u>11 mixed with quartz</u></td> <td><u>42</u></td> <td><u>120</u></td> </tr> </tbody> </table>		FROM	TO	<u>CLAY</u>	<u>0</u>	<u>10</u>	<u>CLAY shale</u>	<u>10</u>	<u>16</u>	<u>Shale</u>	<u>16</u>	<u>42</u>	<u>11 mixed with quartz</u>	<u>42</u>	<u>120</u>	<b>D1 LAND OWNER OR OTHER CONTACT PERSON:</b> NAME <u>JIM SMITH</u> STREET ADDRESS _____ CITY _____ 2 CASING FROM <u>0</u> TO <u>20</u> W/ <u>6</u> "ID FROM _____ TO _____ W/ _____ "ID TYPE CASING: <u>PVC</u> 3 SCREEN TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT 4 GRAVEL PACK FROM _____ FT TO _____ FT 5 BACK FILLED WITH: <u>SHALE</u> FROM <u>0</u> FT TO <u>10</u> FT 6 SEALED WITH: <u>Concrete</u> FROM <u>10</u> FT TO <u>20</u> FT FROM _____ FT TO _____ FT 7 DISINFECTED WITH: <u>Clorox</u> 8 USE OF WELL: DOMESTIC <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> IRRIGATION <input type="checkbox"/> MONITOR <input type="checkbox"/> LIVESTOCK/POULTRY <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL/GAS SUPPLY <input type="checkbox"/> SEMI-PUBLIC <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER _____ (A/C HEATPUMP TYPE WELLS) SOURCE <input type="checkbox"/> RETURN <input type="checkbox"/> CLOSED LOOP <input type="checkbox"/> 9 (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: _____ yes <input type="checkbox"/> no <input type="checkbox"/> 10 (For A/C open-loop only) Into what medium is water returned? 11 REMARKS _____
	FROM	TO														
<u>CLAY</u>	<u>0</u>	<u>10</u>														
<u>CLAY shale</u>	<u>10</u>	<u>16</u>														
<u>Shale</u>	<u>16</u>	<u>42</u>														
<u>11 mixed with quartz</u>	<u>42</u>	<u>120</u>														

<b>C PUMP REPORT</b>	
1 TYPE PUMP: SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/>	
2 SETTING DEPTH: _____ FEET	
3 BRAND NAME AND SERIAL NUMBERS: _____	
4 RATED CAPACITY _____ gallons per minute	
5 TYPE LUBRICATION _____	
6 DROP PIPE OR COLUMN PIPE SIZE _____	
7 WIRE SIZE _____	
8 PRESSURE TANK . . . SIZE, MAKE, MODEL _____	
9 DATE OF INSTALLATION OR REPAIR _____	
10 Is there an abandoned water well on the property?	



## STATE OF ARKANSAS

## REPORT OF WATER WELL CONSTRUCTION

New Well ☒ Work-over Well ☐ Replacement Well ☐  
 Owner of Well Mike Stringer  
 Well Contractor Fred A Smith  
 Contractor License No. C 1014  
 Driller Name and No. Fred A Smith D2270  
 Date Well was Completed 10-10-79

County Ga (in which well is located)  
 Well is near Cedar Glades Rd Road  
 Section 3604 Township T2S Range R20W

1. Total Depth of Well 98 Ft.
2. Water Producing Formation: From 30'-58" Ft. To 88' Ft.  
white quartz
3. Water Level Below Land Surface 12'
4. Gallons per Hour 12 gal min
5. Well Disinfected with Purex
6. Casing to 10' Ft.
7. Cased with 6" Diameter 12.5' PVC Casing
8. Cemented from top Ft. to 10' Ft.

9. Use of Well: Domestic ☐ Irrigation ☐ Municipal ☐ Other ☐  
 This well is guaranteed against defective material or workmanship for a period of \_\_\_\_\_

Form No. AWD-2

Directions for Reaching Well: going on Cedar Glades Rd from Hot Springs turn right past Wild Cat Rd. go approx 1 mile past Wild Cat Rd. 90° right to right-trailer. RT 931844C  
 Description and Color of Formation (sand, shale, sandstone, etc.)  
 Depths from \_\_\_\_\_ in feet to \_\_\_\_\_

Remarks: \_\_\_\_\_  
 Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204.

## Geology Copy

## STATE OF ARKANSAS

## REPORT OF WATER WELL CONSTRUCTION

New Well ☒ Work-over Well ☐ Replacement Well ☐  
 Owner of Well Gerald Wheeler  
 Contractor Fred A Smith C1014  
 Driller Name and No. Fred A Smith D2270  
 Date Well was Completed 11-9-83

County Ga (in which well is located)  
 Well is near Turkey Trot Lane Road  
 Section 35CCD Township T2S Range R20W

Directions for Reaching Well: turn south from Cedar Glades Rd on Smith Rd. Lane left on Baithwood Dr. go to end approx 2 blocks on left.  
 Description and Color of Formation (sand, shale, sandstone, etc.)  
 Depths from \_\_\_\_\_ in feet to \_\_\_\_\_

1. Total Depth of Well 79 Ft.
2. Water Producing Formation: From 28' Ft. To 66' Ft.  
white quartz
3. Water Level Below Land Surface 20'
4. Gallons per Hour min 18 gal
5. Well Disinfected with Purex
6. Casing to 80'-4"-160 PSI
7. Cased with 10'-6"-125 PSI Casing
8. Cemented from Top Ft. to 10' Ft.
9. Use of Well: Domestic ☐ Irrigation ☐ Municipal ☐ Other ☐

Bm sandrock & Top 15'  
city pit  
sandrock-shale 15' 79'  
& city pit Rest

Remarks: \_\_\_\_\_  
 Signed: Fred A Smith Date: 11-8-83

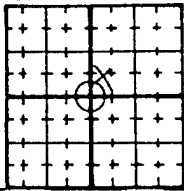

Form No. AWD-3

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

## GEOLOGY COPY

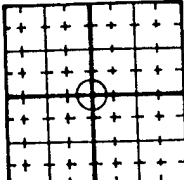
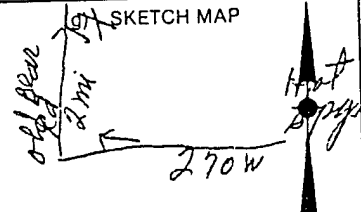


**STATE OF ARKANSAS  
REPORT OF WATER WELL  
CONSTRUCTION**

1 CONTRACTOR Name and number <u>BLEL DRILLING Co.</u> DRILLER Name and number <u>RALPH ALDRICH</u>		C. <u>1023</u> D. _____																																							
2 LOCATION / IDENTIFICATION DATE WELL COMPLETED <u>7-15-87</u> NEW WELL <input checked="" type="checkbox"/> WORK-OVER <input type="checkbox"/>																																									
(a) COUNTY <u>GARLAND</u>	(b) FRACTION <u>SW 1/4 of NE 1/4 of</u>	(c) SECTION <u>35</u> (d) TOWNSHIP <u>2S</u> (e) RANGE <u>20W</u>																																							
(f) LOCATE WITH 'X' IN SECTION BELOW 		(g) SKETCH MAP 																																							
(h) OWNER OF WELL: NAME <u>HENRY L. ROBERTS</u> STREET ADDRESS <u>GLAZY PEAK RD</u> CITY _____		(i) OPERATOR: NAME _____ STREET ADDRESS _____ CITY _____																																							
3 DESCRIPTION OF FORMATION: DEPTHS IN FEET <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">FORMATION</th> <th style="width: 20%;">FROM</th> <th style="width: 20%;">TO</th> </tr> </thead> <tbody> <tr> <td><u>YELLOW CLAY</u></td> <td><u>0</u></td> <td><u>8</u></td> </tr> <tr> <td><u>GRAVEL</u></td> <td><u>8</u></td> <td><u>26</u></td> </tr> <tr> <td><u>GRAY SLATE</u></td> <td><u>26</u></td> <td><u>54</u></td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>		FORMATION	FROM	TO	<u>YELLOW CLAY</u>	<u>0</u>	<u>8</u>	<u>GRAVEL</u>	<u>8</u>	<u>26</u>	<u>GRAY SLATE</u>	<u>26</u>	<u>54</u>																												9 CASING FROM <u>0</u> TO <u>26</u> WI <u>6</u> "ID FROM <u>0</u> TO <u>54</u> WI <u>4</u> "ID TYPE CASING <u>PVC</u>
FORMATION	FROM	TO																																							
<u>YELLOW CLAY</u>	<u>0</u>	<u>8</u>																																							
<u>GRAVEL</u>	<u>8</u>	<u>26</u>																																							
<u>GRAY SLATE</u>	<u>26</u>	<u>54</u>																																							
10 SCREEN: TYPE <u>PVC</u> 4" DIA <u>010</u> SLOT/GA SET BETWEEN _____ ft and _____ ft TYPE _____ DIA _____ SLOT/GA SET BETWEEN _____ ft and _____ ft		11 GRAVEL PACK FROM _____ ft and _____ ft																																							
12 BACK FILLED WITH FROM _____ ft to _____ ft		13 SEALED WITH <u>CEMENT</u> FROM <u>2</u> ft to <u>26</u> ft FROM _____ ft to _____ ft																																							
14 DISINFECTED WITH: <u>70% CHLORINE</u>		15 USE OF WELL: SOURCE WELL <input type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/>																																							
16 PURPOSE: DOMESTIC <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/>		17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES <input type="checkbox"/> NO <input type="checkbox"/> (IF YES NAME USE) _____																																							
4 TOTAL DEPTH OF WELL <u>54</u> ft		18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?																																							
5 WATER PRODUCING FORMATION? <u>40</u>		19 REMARKS:																																							
6 STATIC WATER LEVEL <u>15</u> Ft below land surface		20 SIGNED _____ DATE <u>7-15-87</u>																																							
7 WATER PRODUCTION RATE <u>20</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr WELL PRODUCTS _____		8 DIAMETER OF BORE HOLE <u>6 1/8</u> IN																																							



STATE OF ARKANSAS  
REPORT OF WATER WELL  
CONSTRUCTION

1 CONTRACTOR Name and number <u>Fred A. Smith</u>		C. <u>1014</u>	
DRILLER Name and number <u>Fred A. Smith</u>		D. <u>2270</u>	
2 LOCATION / IDENTIFICATION		DATE WELL COMPLETED <u>9-16-88</u> NEW WELL <input checked="" type="checkbox"/> WORK-OVER <input type="checkbox"/>	
(a) COUNTY <u>ga</u>	(b) FRACTION <u>1/4</u> of	(c) SECTION <u>36 ADD</u>	(d) TOWNSHIP <u>T 25</u>
(f) LOCATE WITH 'X' IN SECTION BELOW 		(g) SKETCH MAP 	
(h) OWNER OF WELL: <u>Jeff Mc Fee</u> NAME STREET ADDRESS <u>Old Bear Rd</u> CITY <u>Royal, Ar.</u>		(i) OPERATOR: <u>Fred A. Smith</u> NAME STREET ADDRESS <u>St Rt 2 Box 514</u> CITY <u>Mountain Pine Ar 71956</u>	
3 DESCRIPTION OF FORMATION: DEPTHS IN FEET		9 CASING FROM <u>Top</u> TO <u>16</u> WI <u>6"</u> "ID FROM <u>        </u> TO <u>        </u> WI <u>        </u> "ID TYPE CASING <u>PVC</u>	
FROM TO		10 SCREEN: TYPE <u>        </u> DIA <u>        </u> SLOT/GA <u>        </u> SET BETWEEN <u>        </u> ft and <u>        </u> ft TYPE <u>        </u> DIA <u>        </u> SLOT/GA <u>        </u> SET BETWEEN <u>        </u> ft and <u>        </u> ft	
<u>Brsandrock top 4'</u>		11 GRAVEL PACK <u>        </u> FROM <u>        </u> ft and <u>        </u> ft	
<u>light grey shale 4'</u>		12 BACK FILLED WITH <u>        </u> FROM <u>        </u> ft to <u>        </u> ft	
<u>dark hard shale with 14'</u>		13 SEALED WITH <u>        </u> FROM <u>        </u> ft to <u>        </u> ft FROM <u>        </u> ft to <u>        </u> ft	
<u>streaks granite &amp; w/ quartz 68'</u>		14 DISINFECTED WITH: <u>Purex</u>	
ATTACH ADDITIONAL SHEETS IF NECESSARY		15 USE OF WELL: <u>Closed system</u> SOURCE WELL <input type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/>	
4 TOTAL DEPTH OF WELL <u>68'</u> ft		16 PURPOSE: DOMESTIC <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/>	
5 WATER PRODUCING FORMATION? <u>w/g</u>		17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? YES <input type="checkbox"/> NO <input type="checkbox"/> (IF YES NAME USE)	
6 STATIC WATER LEVEL <u>21'</u> Ft below land surface		18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?	
7 YIELD <u>15</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr		19 REMARKS: <u>        </u>	
8 DIAMETER OF BORE HOLE <u>6"</u> IN		20 SIGNED <u>Fred A. Smith</u> DATE <u>11-1-88</u>	

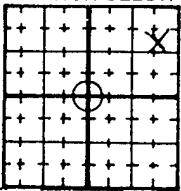
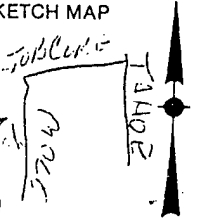
AWD-4 JAN 1988

Arkansas Waterwell Construction Commission 2915 South Pine, Little Rock, AR 72204

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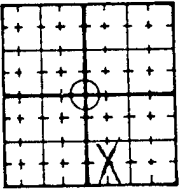


STATE OF ARKANSAS  
REPORT OF WATER WELL  
CONSTRUCTION

1 CONTRACTOR Name and number <u>BILL WHITE</u>		COUNTY <u>Garland</u>		DRILLER Name and number <u>BILLY C. WHITE</u>		WELL NO. <u>1143</u>		D. <u>2299</u>	
2 LOCATION / IDENTIFICATION				DATE WELL COMPLETED <u>5-3-89</u>				NEW WELL <input checked="" type="checkbox"/> WORK-OVER <input type="checkbox"/>	
(a) COUNTY <u>GARLAND</u>		(b) FRACTION <u>1/4</u> of <u>1/4</u>		(c) SECTION <u>36</u>		(d) TOWNSHIP <u>22S</u>		(e) RANGE <u>20W</u>	
(f) LOCATE WITH 'X' IN SECTION BELOW 		(g) SKETCH MAP 		(h) OWNER OF WELL: <u>ROBERT HALL</u> NAME <u>St 1 Box 120</u> STREET ADDRESS <u>ROYAL, ARK</u> CITY <u>71968</u>					
(i) OPERATOR: NAME STREET ADDRESS CITY									
3 DESCRIPTION OF FORMATION: DEPTHS IN FEET				9 CASING FROM <u>0</u> TO <u>20</u> WI <u>6</u> "ID FROM TO WI "ID TYPE CASING <u>PVC</u>					
FROM		TO		10 SCREEN: TYPE DIA SLOT/GA SET BETWEEN ft and ft TYPE DIA SLOT/GA SET BETWEEN ft and ft					
<u>Chunk Rock soft shell</u>		<u>0</u>		<u>20</u>					
<u>Blue Shale - &amp; Quartz</u>		<u>10</u>		<u>105</u>					
				11 GRAVEL PACK FROM ft and ft					
				12 BACK FILLED WITH <u>cuttings shale</u> FROM <u>0</u> ft to <u>10</u> ft					
				13 SEALED WITH <u>Cement</u> FROM <u>10</u> ft to <u>20</u> ft FROM ft to ft					
				14 DISINFECTED WITH: <u>H+H</u>					
				15 USE OF WELL: SOURCE WELL <input type="checkbox"/> RETURN WELL <input type="checkbox"/> A/C CLOSED LOOP <input type="checkbox"/> A/C OPEN LOOP <input type="checkbox"/>					
				16 PURPOSE: DOMESTIC <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> COMMERCIAL <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL AND GAS <input type="checkbox"/> MONITOR <input type="checkbox"/> AGRI/IRRIGATION <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER <input type="checkbox"/>					
ATTACH ADDITIONAL SHEETS IF NECESSARY				17 (For A/C only) WILL SYSTEM ALSO BE USED FOR PURPOSES OTHER THAN A/C? (IF YES NAME USE) YES <input type="checkbox"/> NO <input type="checkbox"/>					
4 TOTAL DEPTH OF WELL <u>105</u> ft				18 (For A/C only) INTO WHAT MEDIUM IS WATER RETURNED?					
5 WATER PRODUCING FORMATION? <u>Quartz</u>				19 REMARKS:					
6 STATIC WATER LEVEL <u>24</u> Ft below land surface				20 SIGNED <u>5/3/89</u> DATE <u>Bill White</u>					
7 WATER PRODUCTION RATE WELL PRODUCTS <u>5</u> gallons per. <input checked="" type="checkbox"/> min <input type="checkbox"/> hr									
8 DIAMETER OF BORE HOLE <u>6 1/4</u> IN									



STATE OF ARKANSAS  
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

<b>A1</b> Contractor Name & Number: <u>BILL WHITE</u> C# <u>1143</u> <b>2</b> Driller Name & Number: <u>BILL WHITE</u> D# <u>2300</u> <b>3</b> Pump Installer Name & Number: _____ P# _____ <b>4</b> Date Well Completed: <u>7-22-91</u> New Well <input checked="" type="checkbox"/> Replace or Work-over <input type="checkbox"/>		<b>10</b> LOCATE WITH 'X' IN SECTION BELOW 																										
<b>5</b> COUNTY <u>GARLAND</u> <b>6</b> FRACTION _____ <b>7</b> SECTION <u>36</u> <b>8</b> TOWNSHIP <u>72S</u> <b>9</b> RANGE <u>R 20W</u> <b>11</b> LONGITUDE _____ <b>11</b> LATITUDE _____																												
<b>B1</b> DESCRIPTION OF FORMATION: DEPTHS IN FEET <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>FROM</th> <th>TO</th> </tr> </thead> <tbody> <tr> <td>Red clay-blue shale</td> <td>0</td> <td>35</td> </tr> <tr> <td>Blue shale</td> <td>35</td> <td>125</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>				FROM	TO	Red clay-blue shale	0	35	Blue shale	35	125																	
	FROM	TO																										
Red clay-blue shale	0	35																										
Blue shale	35	125																										

ATTACH ADDITIONAL SHEETS IF NECESSARY <b>2</b> TOTAL DEPTH OF WELL <u>125 ft</u> <b>3</b> DEPTHS TO WATER PRODUCING FORMATIONS. <u>40 to 70 ft</u> <b>4</b> STATIC WATER LEVEL <u>20</u> Ft below land surface <b>5</b> YIELD <u>6</u> gallons per <input checked="" type="checkbox"/> min <input type="checkbox"/> hr <b>6</b> DIAMETER OF BORE HOLE <u>6 1/4</u> IN	<b>D1</b> LAND OWNER OR OTHER CONTACT PERSON: NAME <u>SANDY BIDEON</u> STREET ADDRESS <u>116 ROCKY REEF CIRCLE</u> CITY <u>HOT SPRINGS, ARK.</u> <b>2</b> CASING FROM <u>0</u> TO <u>35</u> W/ <u>6</u> "ID FROM _____ TO _____ W/ _____ "ID TYPE CASING: <u>PVC</u> <b>3</b> SCREEN TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT TYPE: _____ DIA _____ SLOT/GA _____ SET FROM _____ FT TO _____ FT <b>4</b> GRAVEL PACK FROM _____ FT TO _____ FT <b>5</b> BACK FILLED WITH: <u>Blue shale</u> FROM <u>5</u> FT TO <u>125</u> FT <b>6</b> SEALED WITH: <u>Cement</u> FROM <u>0</u> FT TO <u>5</u> FT FROM _____ FT TO _____ FT <b>7</b> DISINFECTED WITH: <u>H+H</u> <b>8</b> USE OF WELL: DOMESTIC <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> IRRIGATION <input type="checkbox"/> MONITOR <input type="checkbox"/> LIVESTOCK/POULTRY <input type="checkbox"/> TEST WELL <input type="checkbox"/> OIL/GAS SUPPLY <input type="checkbox"/> SEMI-PUBLIC <input type="checkbox"/> PUBLIC SUPPLY <input type="checkbox"/> OTHER _____ (A/C HEATPUMP TYPE WELLS) SOURCE <input type="checkbox"/> RETURN <input type="checkbox"/> CLOSED LOOP <input type="checkbox"/> <b>9</b> (For A/C only) Will system also be used for purposes other than Heating or Air Conditioning? If yes, name use: _____ yes <input type="checkbox"/> no <input type="checkbox"/> <b>10</b> (For A/C open-loop only) Into what medium is water returned? <b>11</b> REMARKS _____ <b>12</b> SIGNED <u>Bill White</u> DATE <u>7/25/91</u>
--	--

<b>C</b> PUMP REPORT <b>1</b> TYPE PUMP: SUBMERSIBLE <input type="checkbox"/> TURBINE <input type="checkbox"/> JET <input type="checkbox"/> <b>2</b> SETTING DEPTH: _____ FEET <b>3</b> BRAND NAME AND SERIAL NUMBERS: _____ <b>4</b> RATED CAPACITY _____ gallons per minute <b>5</b> TYPE LUBRICATION _____ <b>6</b> DROP PIPE OR COLUMN PIPE SIZE _____ <b>7</b> WIRE SIZE _____ <b>8</b> PRESSURE TANK . . . SIZE, MAKE, MODEL _____ <b>9</b> DATE OF INSTALLATION OR REPAIR _____ <b>10</b> Is there an abandoned water well on the property? _____	
--	--



STATE OF ARKANSAS  
REPORT OF WATER WELL CONSTRUCTION

New Well ☒ Work-over Well \_\_\_\_\_ Replacement Well \_\_\_\_\_  
 Owner of Well James Tittle  
 Well Contractor Fred A. Smith  
 Contractor License No. C 1014  
 Driller Name and No. Fred A. Smith D 2270  
 Date Well was Completed 6-13-80

1. Total Depth of Well 61' Ft.
  2. Water Producing Formation: From 25' Ft. To 55' Ft.  
w/quantity
  3. Water Level Below Land Surface 15'
  4. Gallons per Hour 40 gal/min
  5. Well Disinfected with purex
  6. Casing to 10' Ft.
  7. Cased with 125 PVC Diameter 6" Casing
  8. Cemented from top Ft. to 10' Ft.
  9. Use of Well: Domestic ☒ Irrigation \_\_\_\_\_ Municipal \_\_\_\_\_ Other \_\_\_\_\_
- This well is guaranteed against defective material or workmanship for a period of \_\_\_\_\_

Form No. AWD-2

County Ga (in which well is located)  
 Well is near Cedar Glades Rd Road  
 Section 36 B34 Township T25 Range R30W  
 Directions for Reaching Well: go west from H. Tappey on Cedar Glades Rd turn left on first street and go 1/2 mile

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths from	in feet to
<u>yellow sandstone</u>	<u>Top</u>	<u>10'</u>
<u>brown sandstone &amp; flint</u>	<u>10'</u>	<u>20'</u>
<u>Hard shale &amp; sandstone</u>	<u>20'</u>	<u>41'</u>
<u>flint &amp; w/quantity</u>		

Remarks: \_\_\_\_\_  
 Signed: Fred A. Smith Date: 6-20-80

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

Geology Copy

STATE OF ARKANSAS  
REPORT OF WATER WELL CONSTRUCTION

New Well ☒ Work-over Well \_\_\_\_\_ Replacement Well \_\_\_\_\_  
 Owner of Well Jack Ott  
 Contractor Fred A. Smith C1014  
 Driller Name and No. Fred A. Smith D 2270  
 Date Well was Completed 8-12-85

1. Total Depth of Well 85' Ft.
2. Water Producing Formation: From 30' Ft. To 62' Ft.  
w/q
3. Water Level Below Land Surface 20'
4. Gallons per Hour min 18 gal
5. Well Disinfected with Purex
6. Casing to Top-10' Ft.
7. Cased with 125 PVC Diameter 6" Casing
8. Cemented from Top Ft. to 10' Ft.
9. Use of Well: Domestic ☒ Irrigation \_\_\_\_\_ Municipal \_\_\_\_\_ Other \_\_\_\_\_

Form No. AWD-3

County Ga (in which well is located)  
 Well is near Cedar Glades Road  
 Section 36 D1d Township T25 Range R30W  
 Directions for Reaching Well: go west from H. Tappey on Cedar Glades Rd turn left on first street and go 1/2 mile

Description and Color of Formation (sand, shale, sandstone, etc.)	Depths from	in feet to
<u>yellow rock</u>	<u>Top</u>	<u>5'</u>
<u>Brown sandstone</u>	<u>5'</u>	<u>15'</u>
<u>grey shale</u>	<u>15'</u>	<u>25'</u>
<u>Hard shale w/s</u>	<u>25'</u>	<u>85'</u>
<u>granite &amp; w/q</u>		

Remarks: \_\_\_\_\_  
 Signed: Fred A. Smith Date: 10-23-85

Mail to: Committee on Water Well Construction, 2915 So. Pine Street, Little Rock, Arkansas 72204

GEOLOGY COPY



**APPENDIX B**

**BORING LOGS**



# KEY TO BORING LOG SYMBOLS

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2487					
MAJOR DIVISIONS			SYMBOL/ GRAPHIC		DESCRIPTIONS
COARSE-GRAINED SOILS (>50% Smaller Than #200 Sieve)	GRAVELS  (More than 50% of coarse fraction is larger than the #4 sieve size.)	Clean gravels with little or no fines	GW		Well-Graded Gravels, Gravel - Sand Mixtures
			GP		Poorly Graded Gravels, Gravels - Sand Mixtures
		Gravels with over 12% fines	GM		Silty Gravels, Poorly Graded Gravel-Sand-Clay Mixtures
			GC		Clayey Gravels, Poorly Graded Gravel-Sand-Clay Mixtures
	SANDS  (More than 50% of coarse fraction is smaller than the #4 sieve size.)	Clean sands with little or no fines	SW		Well-Graded Sands, Gravelly Sands
			SP		Poorly Graded Sands, Gravelly Sands
		Sands with over 12% fines	SM		Silty Sands, Poorly Graded Sand-Silt Mixtures
			SC		Clayey Sands, Poorly Graded Sand-Clay Mixtures
FINE-GRAINED SOILS (>50% Smaller Than #200 Sieve)	SILTS AND CLAYS  (Liquid limit less than 50)		ML		Inorganic Silts and Very Fine Sands, Silty or Clayey Fine Sands
			CL		Inorganic Clays of Low to Medium Plasticity: Gravelly, Sandy or Silty Clays; Lean Clays
			OL		Organic Clays and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS  (Liquid limit greater than 50)		MH		Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts
			CH		Inorganic Clays of High Plasticity Fat Clays
			OH		Organic Clays of Medium to High Plasticity, Organic Silts
HIGHLY ORGANIC SOILS			Pt		Peat and Other Highly Organic Soils



Shaded interval represents soil sample.

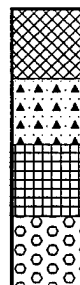


Blackened interval indicates portion of sample prepared for laboratory analysis.



Water Table Level

PID Photo-Ionization Detector readings (ppm)



Asphaltic Concrete



Portland Cement Concrete



Cement Grout



Boulders or Bedrock

FIGURE B.1

KEY TO BORING LOG  
223rd CBCS, Hot Springs ANG  
Hot Springs, Arkansas

OPTTECH  
OPERATIONAL TECHNOLOGIES  
CORPORATION



ODS-001

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Driller: Dennis Young  
 Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 544.2'
1	NA	1.1			95	Clay, silty-sandy, dark brown with pebbly matrix, poorly sorted.
2						
3						
4	NA	0.8			100	Clay, sandy, brown-gray, iron oxide stained; weathered sandstone pebbles.
5				Bedrock		Boring Terminated at 5.1'
6						

SOURCE: PRELIMINARY ASSESSMENT, OPTECH, 1993.

## Log of Borings

223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

OPTECH  
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 CORPORATION

JULY 1995  
 HOTSPRNG\ODS-001



# ODS-002

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 544.6'
1	NA	0.8			95	Asphaltic concrete.
2				Bedrock		Boring Terminated at 1.8'
3						

# ODS-003

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0	NA	4.0			60	Land Surface Elevation: 544.9'
1				Bedrock		Clay, silty-sandy, brown-gray, iron oxide stained with weathered sandstone pebbles.
2						Boring Terminated at 0.8'
3						

## Log of Borings

223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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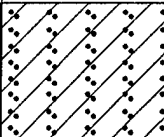
JULY 1995  
 HOTSPRING\ODS-002



# ODS-004

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 545.9'
	NA	1.0			90	Soil; clayey, black, high organic material; poorly sorted pea gravel.
1				Bedrock		Boring Terminated at 1.0'
2						
3						

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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JULY 1995  
 HOTSPRNG\ODS-004



## NEF-001

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 548.9'
	NA	0.8			100	Clay, silty, brown with pebbly matrix consisting of chert and sandstone pebbles.
1						
2	NA	0.9			100	Clay, silty, orange-brown with pebbly matrix consisting of chert and sandstone pebbles.
3				Bedrock		Boring Terminated at 2.75'

## NEF-002

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 554.9'
	NA	1.1			100	Clay, silty, orange-brown with pebbly matrix consisting of shale and sandstone pebbles (some are weathered).
1						
2						
	NA	2.1			100	
3				Bedrock		Boring Terminated at 3.0'

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

OPTTECH  
 OPERATIONAL TECHNOLOGIES  
 CORPORATION

JULY 1995  
 HOTSPRNG\NEF-001



## NEF-003

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 555.4'
1	NA	1.8			100	Clay, silty, brown with pebbly matrix consisting of chert and sandstone pebbles.
2						
3	NA	1.3			100	Clay, silty, orange-brown with pebbly matrix consisting of chert and sandstone pebbles.
				Bedrock	Boring Terminated at 3.0'	

## NEF-004

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 556.7'
1	NA	0.9			100	Clay, silty, brown; with pebbly matrix of chert fragments.
2				Bedrock		Boring Terminated at 0.8'
3						

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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JULY 1995  
 HOTSPRNG\NEF-003



## NEF-005

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 24, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 552.8'
1	NA	1.2			100	Clay, silty, orange-brown with pebbly matrix; pea size; pebbles of sandstone and shale.
2	NA	1.2			100	
3				Bedrock		Boring Terminated at 2.0'

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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 CORPORATION

JULY 1995  
 HOTSPRNG\NEF-005



# CTS-001

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilling Co.: Anderson Drilling

Driller: Dennis Young  
 Date Drilled: Feb. 24, 1994  
 Drilling Method: Hollow Stem Auger  
 Sampling Method: California Style Sampler  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 546.5'
	8					(Fill material): Clay, sandy, dark brown; gravelly (poorly sorted).
1	24	7.4			100	Clay, sandy, gray-brown with pebbly matrix consisting of weathered sandstone pebbles.
	48					
2				Bedrock		Boring Terminated at 1.5'
3						

# CTS-002

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilling Co.: Anderson Drilling

Driller: Dennis Young  
 Date Drilled: Feb. 24, 1994  
 Drilling Method: Hollow Stem Auger  
 Sampling Method: California Style Sampler  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 546.4'
	4					
1	8	28.5			100	Clay, silty brown with pebbly matrix; pea-pebble size, consisting of sandstone and shale.
	9					
2	9					
	22	4.7			100	
	50					
3				Bedrock		Boring Terminated at 2.75'

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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 OPERATIONAL TECHNOLOGIES  
 CORPORATION

JULY 1995  
 HOTSPRNG\CTS-001



CTS-003

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilling Co.: Anderson Drilling

Driller: Dennis Young  
 Date Drilled: Feb. 24, 1994  
 Drilling Method: Hollow Stem Auger  
 Sampling Method: California Style Sampler  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 546.3'
	10					(Fill material): Clay, loam, high organic material; dark brown; gravelly, poorly sorted.
	4	25.0			75	
1	5					
	5					Clay, silty-sand brown, iron oxide stained with pebbly matrix, pea size; pebbles of quartz, sandstone and shale.
	18	24.5			90	
2	50					
3				Bedrock		Boring Terminated at 3.0'

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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 CORPORATION

JULY 1995  
 HOTSPRNG\CTS-003



# NWD-001

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 543.1'
1	NA	1.2			90	Soil, clay, dark brown; root fragments, poorly sorted pebbles consisting of chert, sandstone and shale.
2				Bedrock		Boring Terminated at 0.8'

# NWD-002

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 542.5'
1	NA	0.8			95	Soil, clay, dark brown; root fragments, poorly sorted pebbles consisting of chert and shale.
2						
3						
4	NA	1.0			90	Clay, silty, brown with pebbly matrix consisting of chert, sandstone and shale.
				Bedrock		Boring Terminated at 4.2'

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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 CORPORATION

JULY 1995  
 HOTSPRNG\NWD-001



# NWD-003

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 541.2'
0	NA	0.8			100	Soil, clay, dark brown, poorly sorted pebbles consisting of chert, shale and sandstone.
1						
2						
3						
4	NA	0.8			100	Clay, silty, gray-brown, iron oxide stained with weathered sandstone and shale zones.
5						
				Bedrock		Boring Terminated at 5.2'
6						

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

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 OPERATIONAL TECHNOLOGIES  
 CORPORATION

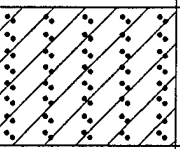
JULY 1995  
 HOTSPRING\NWD-003



NWD-004

Project No.: 1308-193  
 Logged By: Earl Parker  
 Verified By: Quin Baber, B&F Engineering  
 Drilled By: Joe Byrd

Date Drilled: Feb. 25, 1994  
 Drilling Method: Hand Auger  
 Sampling Method: Hand Auger  
 Inclination: Vertical

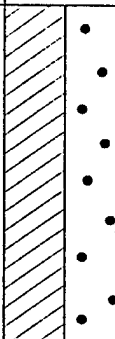
Depth (ft.)	Blows/ft.	(PID) Field Screening (PPM)	Sampled	Graphic	% Recovery	Description
0						Land Surface Elevation: 539.5'
	NA	0.8			90	Soil, clay, dark brown; root fragments, poorly sorted pebbles consisting of chert, sandstone and shale.
1				Bedrock		Boring Terminated at 1.0'
2						
3						

Log of Borings  
 223rd CBCS, Hot Springs ANG  
 Hot Springs, Arkansas

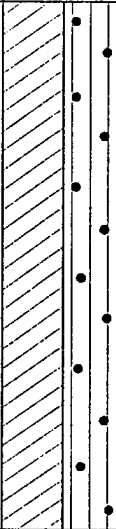
OPTTECH  
 OPERATIONAL TECHNOLOGIES  
 CORPORATION

JULY 1995  
 HOTSPRNG\NWD-004


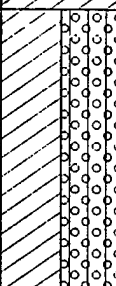


DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. CTS-001
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-24-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0	(FILL MATERIAL): CLAY, SANDY, DK. BROWN; GRAVELLY (POORLY SORTED)	CL-GP		OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	CLAY, SANDY, GRAY-BROWN WITH PEBBLY MATRIX CONSISTING OF WEATHERED SANDSTONE PEBBLES			
2.0	B.O.H. 1.75'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

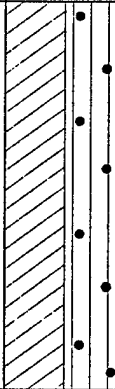


DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. CTS-002
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-24-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	CLAY, SILTY BROWN WITH PEBBLY MATRIX; PEA-PEBBLE SIZE, CONSISTING OF SANDSTONE AND SHALE	CL-GM		
2.0				
3.0	B.O.H. 2.75'			
4.0				
5.0				
6.0				
7.0				
8.0				



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. CTS-003
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-24-94	
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	(FILL MATERIAL): CLAY, LOAM, HIGH ORGANIC MATERIAL; DK. BROWN; GRAVELLY, POORLY SORTED	cl		
2.0	CLAY, SILTY-SANDY BROWN, IRON OXIDE STAINED WITH PEBBLY MATRIX, PEA SIZE; PEBBLES OF QUARTZ, SANDSTONE AND SHALE	CL-SM		
3.0	B.O.H. 3.0'			
4.0				
5.0				
6.0				
7.0				
8.0				



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. NEF-005
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-24-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
0.0 0.5 1.0 1.5 2.0	CLAY, SILTY, ORANGE-BROWN, WITH PEBBLY MATRIX; PEA SIZE; PEBBLES OF SANDSTONE AND SHALE	CL-GM		HAND AUGER
2.0	B.O.H. 2.0'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				



# DRILLING LOG

B&F ENGINEERING, INC.  
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

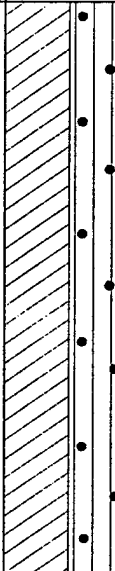
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PROJECT  
OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

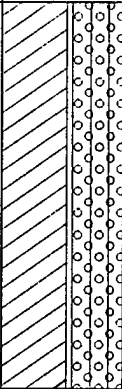
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7-2802-0101

DRILL DATE  
2-24-94

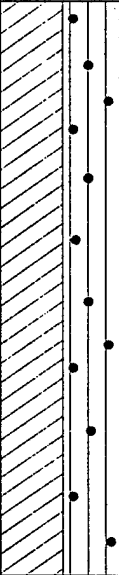
SHEET 1  
OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	CLAY, SILTY, BROWN; WITH PEBBLY MATRIX CONSISTING OF CHERT FRAGMENTS	CL-CM		HAND AUGER
2.0				
3.0	B.O.H. 3.0'			
4.0				
5.0				
6.0				
7.0				
8.0				

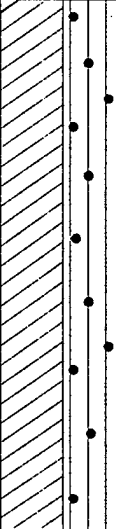


DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. NEF-003
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-24-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	CLAY, SILTY-SANDY, BROWN; WITH PEBBLY MATRIX CONSISTING OF SHALE, SANDSTONE AND CHERT FRAGMENTS	CL-SM		HAND AUGER
2.0	B.O.H. 2.0'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. NEF-002
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-24-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	CLAY, SILTY, ORANGE-BROWN WITH PEBBLY MATRIX CONSISTING OF SHALE AND SANDSTONE PEBBLES (SOME ARE WEATHERED)	CL-GM		HAND AUGER
2.0				
3.0	B.O.H. 3.0'			
4.0				
5.0				
6.0				
7.0				
8.0				



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. NEF-001
PROJECT OPTTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-24-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	CLAY, SILTY, BROWN WITH PEBBLY MATRIX CONSISTING OF CHERT AND SANDSTONE PEBBLES	CL-GM		HAND AUGER
2.0	CLAY, SILTY, ORANGE-BROWN WITH PEBBLY MATRIX CONSISTING OF CHERT AND SANDSTONE PEBBLES			
3.0	B.O.H. 2.75'			
4.0				
5.0				
6.0				
7.0				
8.0				



# DRILLING LOG

B&F ENGINEERING, INC.  
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

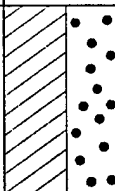
HOLE NO. 00S-001

PROJECT  
OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.  
7-2802-0101

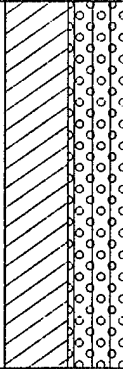
DRILL DATE  
2-25-94

SHEET 1  
OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	SOIL; CLAYEY, BLACK, HIGH ORGANIC MATERIAL; POORLY SORTED PEA GRAVEL	CL-GP		HAND AUGER
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

B.O.H. 1.0'



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. 00S-002
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-25-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	CLAY, SANDY, ORANGE-BROWN WITH PEBBLY MATRIX CONSISTING OF PEA SIZE CHERT	CL-SC		HAND AUGER
2.0	B.O.H. 1.8'			
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				



# DRILLING LOG

B&F ENGINEERING, INC.  
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. 00S-004

PROJECT  
OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.  
7-2802-0101

DRILL DATE  
2-25-94

SHEET 1  
OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
---------------	-------------	-------------	----------------	---

OPTECH COLLECTED SAMPLE  
FOR ANALYSIS

CLAY, SILTY-SANDY, DK BROWN WITH PEBBLY MATRIX, POORLY SORTED

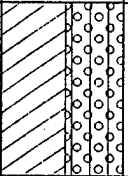
HAND AUGER

CLAY, SANDY, BROWN-GRAY, IRON OXIDE STAINED;  
WEATHERED SANDSTONE PEBBLES

CL-SC

B.O.H. 4.0'



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. 00S-003
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-25-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	CLAY, SILTY-SANDY, BROWN-GRAY, IRON OXIDE STAINED WITH WEATHERED SANDSTONE PEBBLES	CL-SM		HAND AUGER
1.0	B.O.H. 0.8'			
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				



# DRILLING LOG

B&F ENGINEERING, INC.  
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

HOLE NO. NWD-001

PROJECT  
OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.  
7-2802-0101

DRILL DATE  
2-25-94

SHEET 1  
OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
---------------	-------------	-------------	----------------	---

0.0

OPTECH COLLECTED SAMPLE  
FOR ANALYSIS

SOIL, CLAY, DK BROWN; ROOT FRAGMENTS, POORLY SORTED PEBBLES  
CONSISTING OF CHERT, SANDSTONE AND SHALE

CL

HAND AUGER

1.0

B.O.H. 0.8'

2.0

3.0

4.0

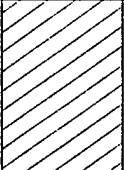
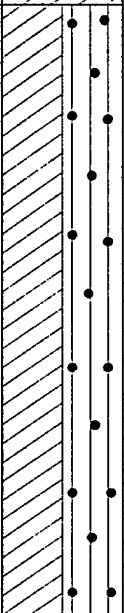
5.0

6.0

7.0

8.0



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. NWD-002
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-25-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
	SOIL, CLAY, DK BROWN; ROOT FRAGMENTS, POORLY SORTED PEBBLES CONSISTING OF CHERT AND SANDSTONE	CL		HAND AUGER
1.0	CLAY, SILTY, BROWN WITH PEBBLY MATRIX CONSISTING OF CHERT, SANDSTONE AND SHALE	CL-GM		
2.0				
3.0				
4.0				
	B.O.H. 4.2'			
5.0				
6.0				
7.0				
8.0				



# DRILLING LOG

B&F ENGINEERING, INC.  
928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366

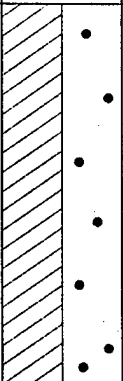
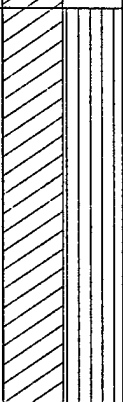
HOLE NO. NWD-003

PROJECT  
OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION

JOB NO.  
7-2802-0101

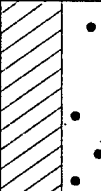
DRILL DATE  
2-25-94

SHEET 1  
OF 1 SHEETS

DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	SOIL, CLAY, DK BROWN, POORLY SORTED PEBBLES CONSISTING OF CHERT, SHALE AND SANDSTONE	CL-GP		HAND AUGER
2.0	CLAY, SILTY, GRAY-BROWN, IRON OXIDE STAINED WITH WEATHERED SANDSTONE AND SHALE ZONES	CL-ML		
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				

B.O.H. 5.2'



DRILLING LOG		B&F ENGINEERING, INC. 928 AIRPORT RD., HOT SPRINGS, ARK. 71913 767-2366		HOLE NO. NWD-004
PROJECT OPTECH: HOT SPRINGS AIR NATIONAL GUARD STATION		JOB NO. 7-2802-0101	DRILL DATE 2-25-94	SHEET 1 OF 1 SHEETS
DEPTH (ft)	DESCRIPTION	USC USGS	GRAPHIC LOG	REMARKS (Pull information, sample collection, significant observations)
0.0				OPTECH COLLECTED SAMPLE FOR ANALYSIS
1.0	SOIL, CLAY, DK BROWN; ROOT FRAGMENTS, POORLY SORTED PEBBLES CONSISTING OF CHERT, SANDSTONE AND SHALE	CL-GP		HAND AUGER
	B.O.H. 1.0'			
2.0				
3.0				
4.0				
5.0				
6.0				
7.0				
8.0				



**Appendix C**  
**Field PID Results – Soil**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

Boring	Sample Interval (ft. BLS)	PID Reading* (ppm)	
		Upon Sample Retrieval	Ambient Temperature Headspace Analysis
NEF-005BH	0.0 - 1.0	1.2	0.0
NEF-005BH	1.0 - 2.0	1.2	1.1
CTS-003BH	0.0 - 1.5	25.0	13.4
CTS-003BH	1.5 - 3.0	24.5	7.8
CTS-002BH	0.0 - 1.5	28.5	6.1
CTS-002BH	1.5 - 3.0	4.7	4.7
CTS-001BH	0.0 - 1.5	7.4	4.3
NEF-004BH	0.0 - 1.0	0.9	0.8
NEF-003BH	0.0 - 1.0	1.8	0.7
NEF-003BH	1.0 - 2.0	1.3	1.6
NEF-002BH	0.0 - 1.0	1.1	1.2
NEF-002BH	2.0 - 3.0	2.1	1.1
NEF-001BH	0.0 - 1.0	0.8	0.7
NEF-001BH	1.75 - 2.75	0.9	1.1
NEF-003BH	2.0 - 3.0	1.3	1.1
ODS-004BH	0.0 - 1.0	1.0	0.9
ODS-002BH	1.0 - 1.8	0.8	N/A
ODS-001BH	0.0 - 0.1	1.1	3.4
ODS-001BH	4.0 - 5.0	0.8	1.0
ODS-003BH	0.0 - 0.8	4.0	N/A
NWD-001BH	0.0 - 0.8	1.2	1.9
NWD-002BH	0.0 - 1.0	0.8	N/A
NWD-002BH	3.0 - 4.2	1.0	5.9
NWD-003BH	0.0 - 1.0	0.8	0.9
NWD-003BH	4.2 - 5.2	0.8	1.0
NWD-004BH	0.0 - 1.0	0.8	0.8

PID – Photoionization Detector.  
 ppm – parts per million.  
 ft. BLS – feet below land  
 surface.  
 NEF – Northeast and East Fence  
 Line Area of Concern (AOC).

CTS – Current Temporary Waste Storage  
 AOC.  
 ODS – Old Drum Storage AOC.  
 NWD – Northwest Ditch AOC.  
 BH – Borehole.  
 \*PID calibrated with 100 ppm isobutylene.

N/A – No soil.



**Appendix C**  
**Field PID Results – Soil**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

Boring	Sample Interval (ft. BLS)	PID Reading* (ppm)	
		Upon Sample Retrieval	Ambient Temperature Headspace Analysis
NEF-005BH	0.0 - 1.0	1.2	0.0
NEF-005BH	1.0 - 2.0	1.2	1.1
CTS-003BH	0.0 - 1.5	25.0	13.4
CTS-003BH	1.5 - 3.0	24.5	7.8
CTS-002BH	0.0 - 1.5	28.5	6.1
CTS-002BH	1.5 - 3.0	4.7	4.7
CTS-001BH	0.0 - 1.5	7.4	4.3
NEF-004BH	0.0 - 1.0	0.9	0.8
NEF-003BH	0.0 - 1.0	1.8	0.7
NEF-003BH	1.0 - 2.0	1.3	1.6
NEF-002BH	0.0 - 1.0	1.1	1.2
NEF-002BH	2.0 - 3.0	2.1	1.1
NEF-001BH	0.0 - 1.0	0.8	0.7
NEF-001BH	1.75 - 2.75	0.9	1.1
NEF-003BH	2.0 - 3.0	1.3	1.1
ODS-004BH	0.0 - 1.0	1.0	0.9
ODS-002BH	1.0 - 1.8	0.8	N/A
ODS-001BH	0.0 - 0.1	1.1	3.4
ODS-001BH	4.0 - 5.0	0.8	1.0
ODS-003BH	0.0 - 0.8	4.0	N/A
NWD-001BH	0.0 - 0.8	1.2	1.9
NWD-002BH	0.0 - 1.0	0.8	N/A
NWD-002BH	3.0 - 4.2	1.0	5.9
NWD-003BH	0.0 - 1.0	0.8	0.9
NWD-003BH	4.2 - 5.2	0.8	1.0
NWD-004BH	0.0 - 1.0	0.8	0.8

PID – Photoionization Detector.  
 ppm – parts per million.  
 ft. BLS – feet below land  
 surface.  
 NEF – Northeast and East Fence  
 Line Area of Concern (AOC).

CTS – Current Temporary Waste Storage  
 AOC.  
 ODS – Old Drum Storage AOC.  
 NWD – Northwest Ditch AOC.  
 BH – Borehole.  
 \*PID calibrated with 100 ppm isobutylene.

N/A – No soil.



**Appendix C  
GC Screening Results – Soil**

**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations				Total BTEX (ppb)
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
50 PPB BTEX	STD	NA	50	50	50	150	300
NEF-005BH	0.0 - 1.0	10g	ND	0.9	2.1	8.1	11.1
NEF-005BH	1.0 - 2.0	10g	ND	1.0	2.6	11.5	15.1
AIR BLANK	NA	NA	ND	0.4	3.3	13.8	18.6
CTS-003BH	0.0 - 1.5	10g	ND	1.4	3.0	13.9	18.3
CTS-003BH	1.5 - 3.0	10g	ND	1.1	2.9	12.4	16.3
50 PPB BTEX	STD	NA	50	50	50	150	300
CTS-002BH	0.0 - 1.5	10g	ND	0.1	2.4	0.6	3.1
CTS-002BH	1.5 - 2.75	10g	ND	0.2	2.4	0.8	3.3
NEF-004BH	0.0 - 1.0	10g	ND	0.1	0.9	0.4	1.5
NEF-004BH	0.0 - 1.0	10g	ND	0.1	7.4	0.9	8.4
NEF-002BH	0.0 - 1.0	10g	ND	0.2	1.7	ND	1.9
50 PPB BTEX	RECAL	NA	9.7	7.0	18.7	55.0	90.4
50 PPB BTEX	RECAL	NA	50	50	50	150	300
NEF-003BH	0.0 - 1.0	10g	ND	1.6	6.7	3.9	12.2
NEF-003BH	2.0 - 3.0	10g	ND	12.7	25.1	16.5	54.3
AIR BLANK	NA	NA	ND	1.6	6.2	3.3	11.1
CTS-001BH	0.0 - 1.5	10g	ND	8.8	17.0	12.2	38.0
NEF-001BH	0.0 - 1.0	10g	ND	0.9	4.6	2.6	8.2
NEF-001BH	1.75 - 2.75	10g	ND	1.3	7.0	6.6	14.8
1 PPM BTEX	STD	NA	1,000	1,000	3,000	1,000	6,000
ODS-004BH	0.0 - 1.0	10g	ND	ND	20.7	ND	20.7

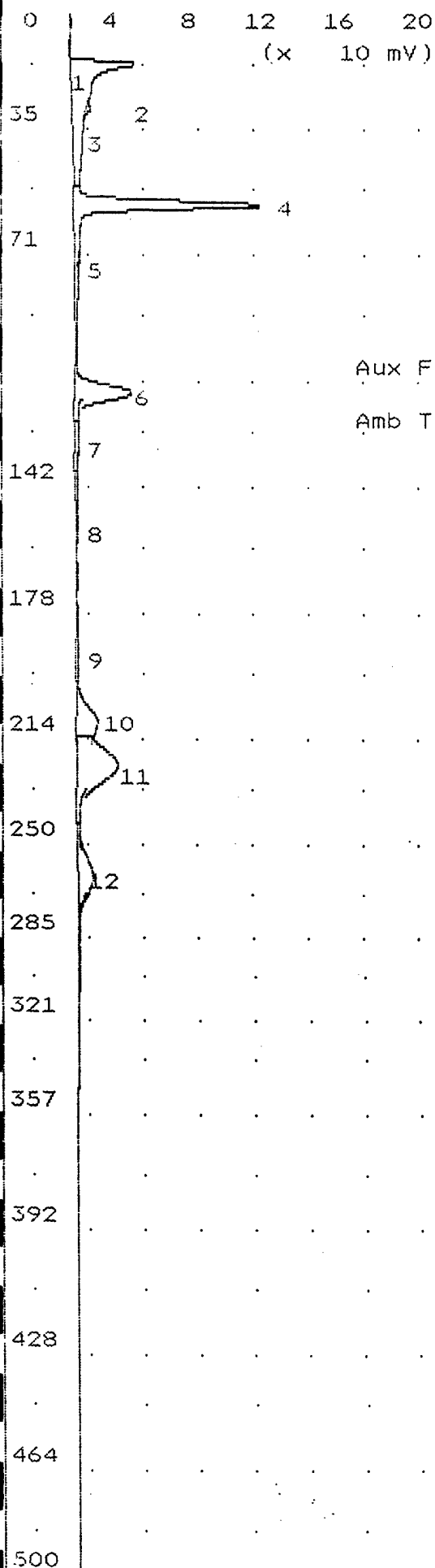


**Appendix C (Concluded)**  
**GC Screening Results – Soil**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

Boring	Sample Interval (ft. BLS)	Sample Mass (grams)	Volatile Concentrations				Total BTX (ppb)
			Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
ODS-002BH	1.0 - 1.8	10g	27.7	ND	22.4	ND	50.3
ODS-001BH	0.0 - 1.0	10g	ND	ND	ND	ND	ND
ODS-001BH	4.0 - 5.0	10g	ND	ND	ND	ND	ND
ODS-003BH	0.0 - 0.8	10g	ND	ND	ND	ND	ND
1 PPM BTX	Before Reintegration	NA	921	753	2,000	649	4,326
1 PPM BTX	RECAL	NA	1,000	1,000	3,000	1,000	6,000
NWD-001BH	0.0 - 0.8	10g	ND	ND	ND	ND	ND
AIR BLANK	NA	NA	ND	ND	ND	ND	ND
NWD-001BH	UNKNOWN	10g	ND	ND	ND	ND	ND
NWD-004BH	0.0 - 1.0	10g	ND	ND	ND	ND	ND
NWD-003BH	0.0 - 1.0	10g	ND	ND	ND	ND	ND
NEF-001BH	1.75 - 2.75	10g	ND	ND	ND	ND	ND
NWD-002BH	3.0 - 4.2	10g	ND	ND	ND	ND	ND
1 PPM BTX	Before Reintegration	NA	1,120	865	1,800	566	4,350
1 PPM BTX	Reintegrated	NA	1,000	1,000	3,000	1,000	6,000
AIR BLANK	NA	NA	ND	ND	ND	ND	ND

GC – Gas Chromatograph.  
g – grams.  
ft. BLS – feet below land surface.  
ND – Not Detected.  
BH – Borehole.  
CTS – Current Temporary Waste Storage Area of Concern (AOC).  
NWD – Northwest Ditch AOC.  
BTX – Benzene, Toluene, Ethylbenzene, Xylenes.  
PPM – parts per million.  
PPB/ppb – parts per billion.  
STD – BTX Calibration Standard.  
NEF – Northeast and East Fence Line AOC.  
ODS – Old Drum Storage AOC.  
RECAL – Recalibration of GC using BTX Standard.  
NA – Not Applicable.





Time Printed: Feb 24,94 11:41

Sample Time: Feb 24,94 11:20

## Method

Slope Up 0.500 mV/Sec

Slope Down 1.500 mV/Sec

Min Area 0.000 mVSec

Min Height 0.000 mV

Analysis Delay 0.0 sec

Window Percent 20.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 40 C

Amb Temp 31 C

Max Gain 10

Analysis Time 500.0 sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.136 mVS	2.8
2	Unknown	319.8 mVS	14.6
3	Unknown	3.880 mVS	27.2
4	benzene	50.00 ppb	55.0
5	Unknown	1.510 mVS	68.9
6	toluene	50.00 ppb	108.0
7	Unknown	27.82 mVS	124.9
8	Unknown	29.07 mVS	149.8
9	Unknown	21.49 mVS	186.2
10	ethylbenzene	50.00 ppb	208.0
11	m-p-xylene	100.0 ppb	222.4
12	o-xylene	50.00 ppb	260.5

## Notes

Operator: Mark Henson

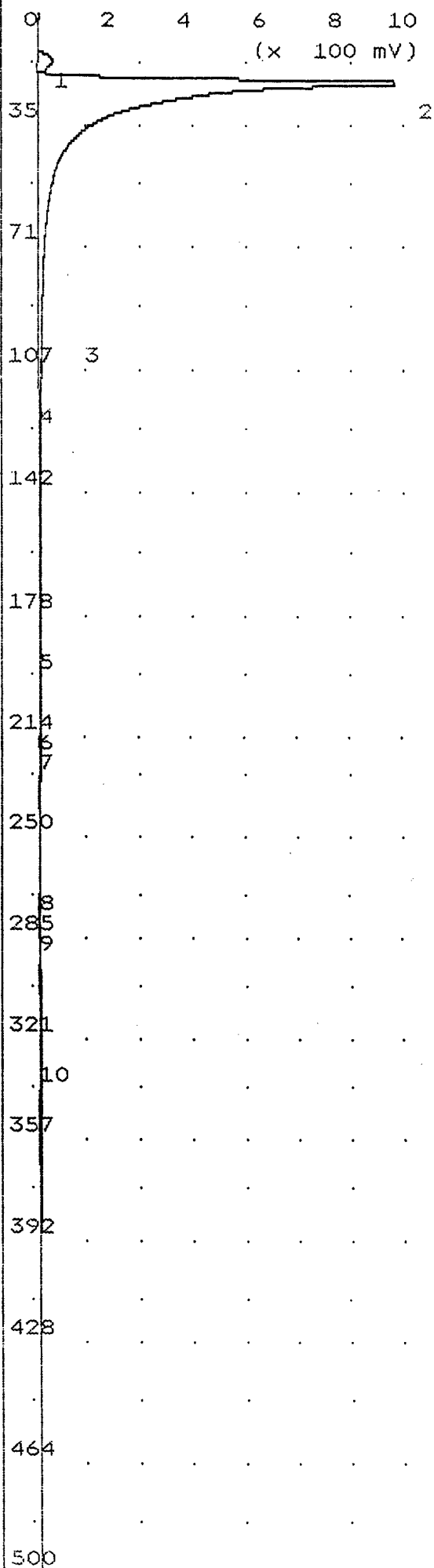
Site: 223rd CCSQ

Arkansas ANG3

Hot Springs, ARK

50 ppm betex std (initial cal.)





Time Printed: Feb 24,94 12:20

Sample Time: Feb 24,94 12:11

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	500.0	sec

## Peak Report

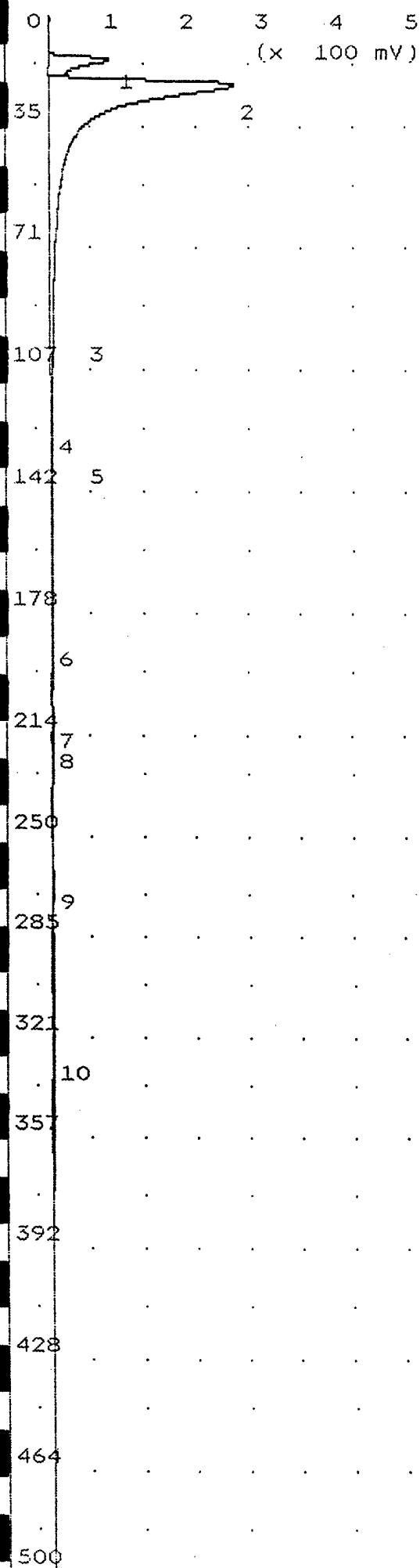
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	168.5 mVS	14.6
2	Unknown	8.894 VSec	20.7
3	toluene	0.910 ppb	99.8
4	Unknown	4.442 mVS	118.0
5	Unknown	12.53 mVS	183.2
6	ethylbenzene	2.082 ppb	211.2
7	m-p-xylene	3.609 ppb	223.4
8	o-xylene	4.534 ppb	263.4
9	Unknown	4.128 mVS	284.5
10	Unknown	8.883 mVS	328.2

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG3  
Hot Springs, ARK

Sample: NEF 005 BH  
Interval 1





Time Printed: Feb 24,94 12:41

Sample Time: Feb 24,94 12:32

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	500.0	sec

## Peak Report

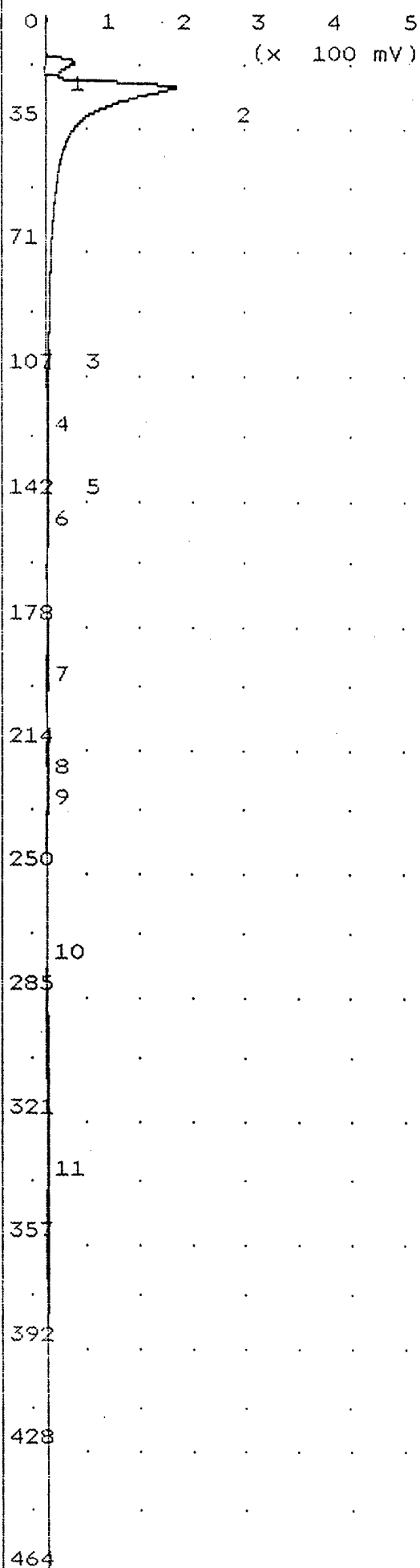
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	280.7 mVS	13.8
2	Unknown	2.910 VSec	21.2
3	toluene	0.962 ppb	100.0
4	Unknown	4.849 mVS	119.3
5	Unknown	5.290 mVS	136.4
6	Unknown	14.52 mVS	185.6
7	ethylbenzene	2.579 ppb	211.4
8	m-p-xylene	4.511 ppb	223.6
9	o-xylene	7.032 ppb	263.7
10	Unknown	8.245 mVS	328.5

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: NEF 005 BH  
Interval 2





Time Printed: Feb 24, 94 12:57

Sample Time: Feb 24, 94 12:44

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	500.0	sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	150.2 mVS	14.0
2	Unknown	2.281 VSec	21.0
3	toluene	1.432 ppb	100.5
4	Unknown	4.995 mVS	118.5
5	Unknown	1.907 mVS	135.6
6	Unknown	2.559 mVS	144.6
7	Unknown	14.29 mVS	184.6
8	ethylbenzene	3.335 ppb	210.0
9	m-p-xylene	5.429 ppb	223.8
10	o-xylene	8.362 ppb	263.2
11	Unknown	9.723 mVS	327.4

## Notes

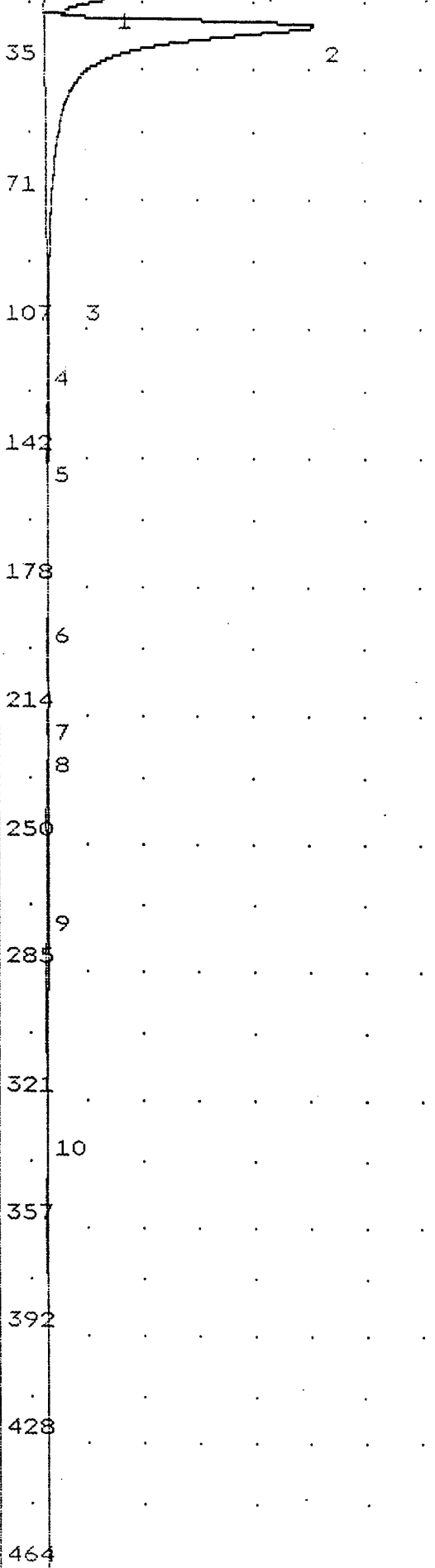
Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: Air Blank



Analysis #7 10S+ GC Function Analysis Report

0 1 2 3 4 5  
(x 100 mV)



Time Printed: Feb 24,94 13:11

Sample Time: Feb 24,94 13:03

Method

Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
B/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 10  
Analysis Time 500.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	293.0 mVS	13.9
2	Unknown	3.405 VSec	21.4
3	toluene	1.388 ppb	100.0
4	Unknown	4.544 mVS	118.0
5	Unknown	0.389 mVS	137.0
6	Unknown	13.63 mVS	184.2
7	ethylbenzene	3.041 ppb	209.2
8	m-p-xylene	5.780 ppb	224.4
9	o-xylene	8.106 ppb	264.5
10	Unknown	5.812 mVS	331.4

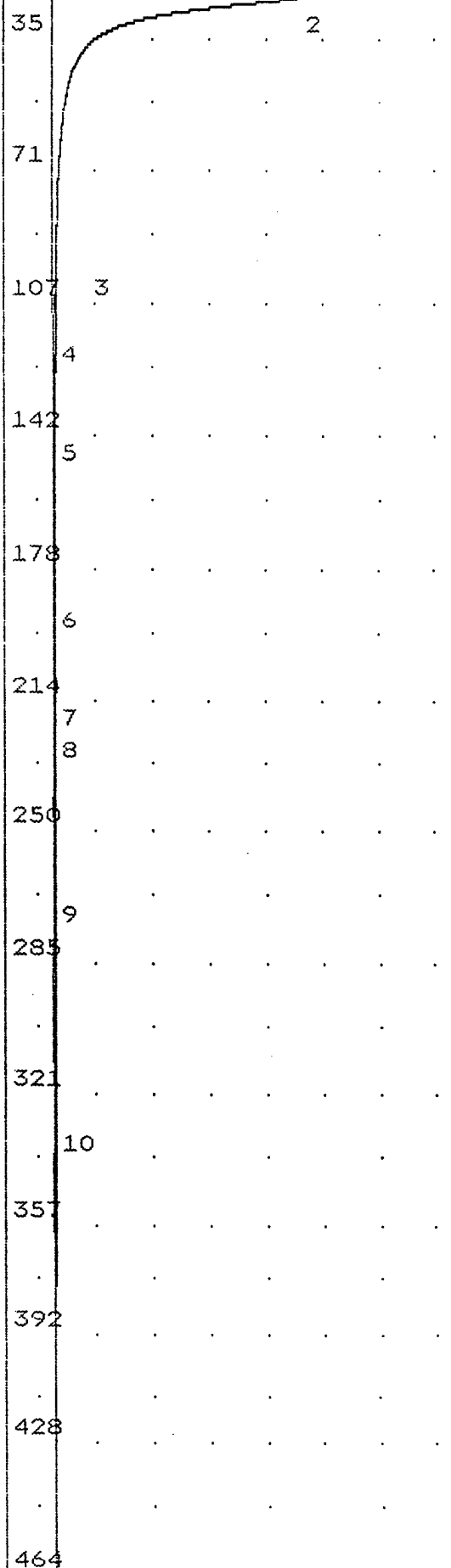
Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: CTS-003 BH  
int 1



Analysis #8 1061 GC Function Analysis Report  
0 1 2 3 4 5  
(x 100 mV)



Time Printed: Feb 24,94 13:36  
Sample Time: Feb 24,94 13:22  
Method  
Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
B/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 10  
Analysis Time 500.0 sec

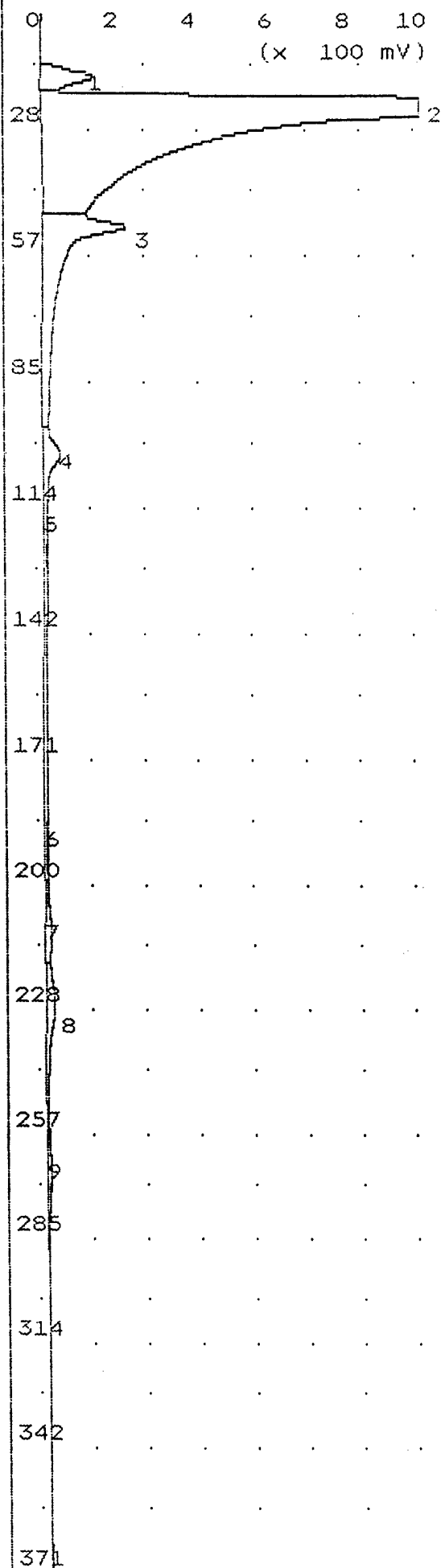
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	293.3 mVS	14.0
2	Unknown	3.537 VSec	21.4
3	toluene	1.116 ppb	100.8
4	Unknown	4.701 mVS	118.8
5	Unknown	5.685 mVS	137.8
6	Unknown	15.98 mVS	186.0
7	ethylbenzene	2.871 ppb	211.6
8	m-p-xylene	4.668 ppb	224.0
9	o-xylene	7.693 ppb	265.3
10	Unknown	10.84 mVS	329.3

Notes  
Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: CTS-003 BH  
int 2





Time Printed: Feb 24,94 13:57

Sample Time: Feb 24,94 13:43

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	521.6 mVS	14.6
2	Unknown	25.30 VSec	21.3
3	benzene	50.00 ppb	48.8
4	toluene	50.02 ppb	100.0
5	Unknown	5.065 mVS	116.2
6	Unknown	8.358 mVS	182.4
7	ethylbenzene	50.02 ppb	209.0
8	m-p-xylene	100.0 ppb	225.4
9	o-xylene	50.15 ppb	266.4

## Notes

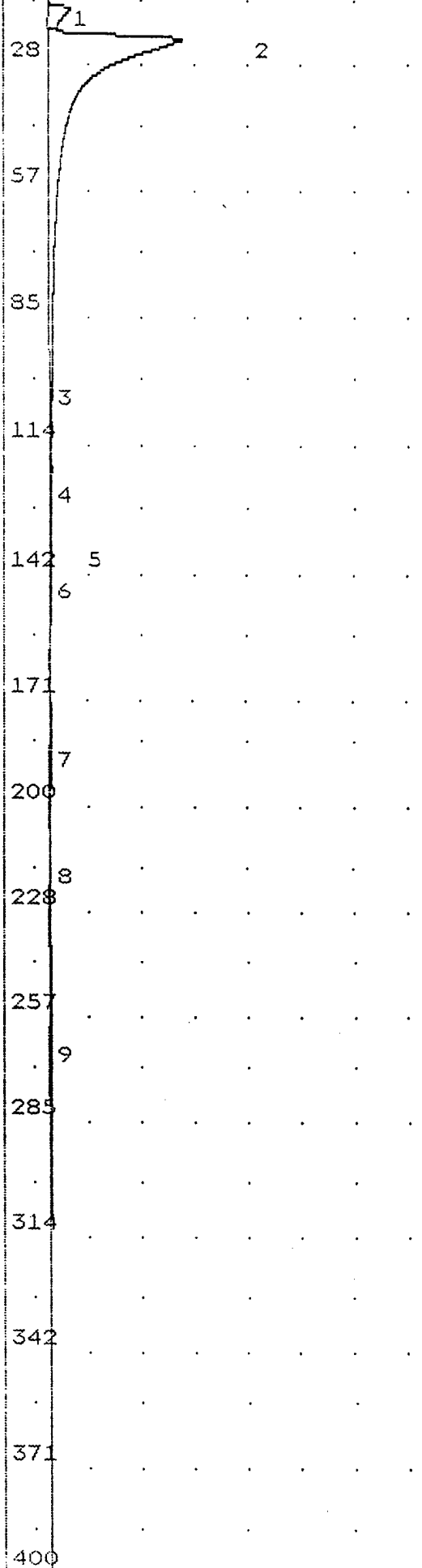
Operator: Mark Henson  
Site: 223rd CCSQ

Arkansas ANG  
Hot Springs, ARK

Sample: 50 ppb std



0 1 2 3 4 5  
(x 100 mV)



Time Printed: Feb 24,94 14:14  
Sample Time: Feb 24,94 14:06  
Method  
Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
B/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 10  
Analysis Time 400.0 sec

## Peak Report

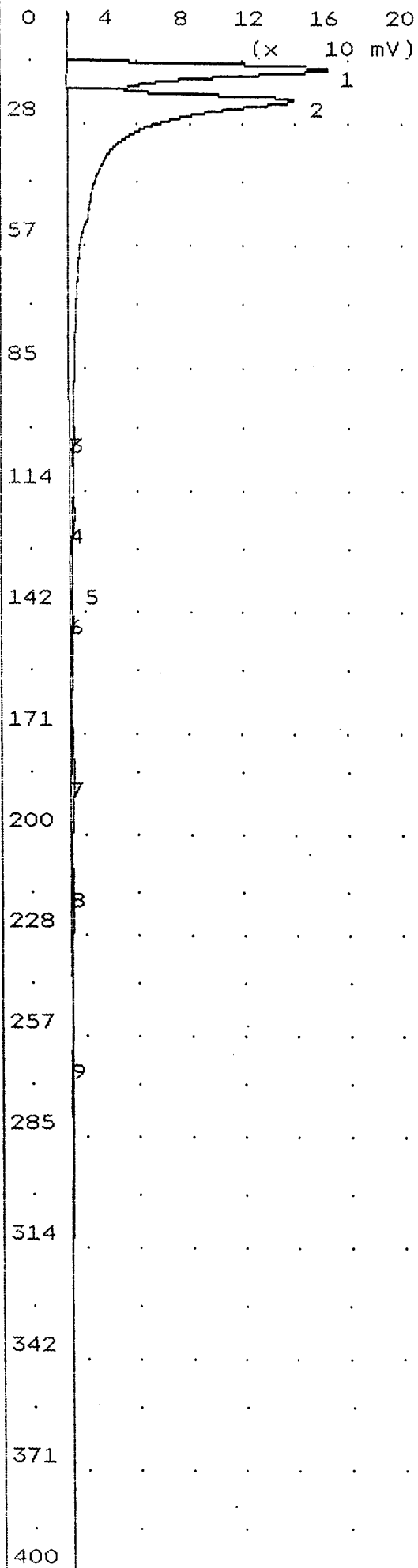
PK	Compound Name	Area/Conc	R.T.
1	Unknown	106.0 mVS	13.8
2	Unknown	2.265 VSec	20.8
3	toluene	0.114 ppb	99.4
4	Unknown	6.214 mVS	117.6
5	Unknown	3.163 mVS	136.6
6	Unknown	3.039 mVS	144.8
7	Unknown	17.19 mVS	183.8
8	ethylbenzene	2.347 ppb	211.8
9	o-xylene	0.623 ppb	259.7

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: cts-002 bh  
int 1





Time Printed: Feb 24,94 15:05  
Sample Time: Feb 24,94 14:16  
Method  
Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
B/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 10  
Analysis Time 400.0 sec

#### Peak Report

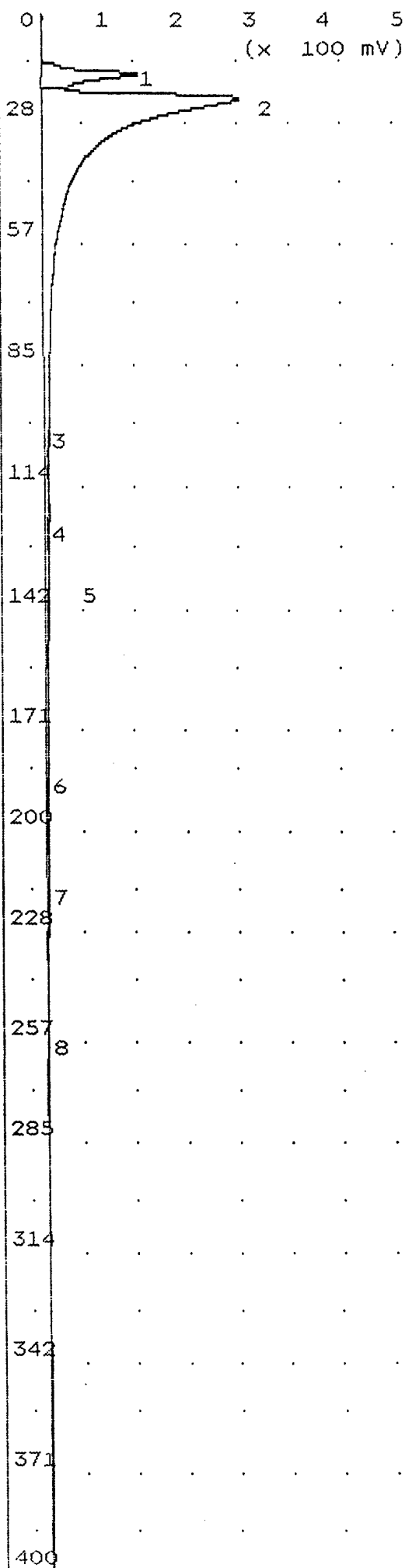
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	544.1 mVS	13.8
2	Unknown	1.518 VSec	21.2
3	toluene	0.179 ppb	99.2
4	Unknown	6.127 mVS	117.8
5	Unknown	2.114 mVS	135.2
6	Unknown	3.863 mVS	144.4
7	Unknown	18.02 mVS	185.4
8	ethylbenzene	2.352 ppb	211.4
9	o-xylene	0.804 ppb	259.7

#### Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: cts-002 bh  
int 2





Time Printed: Feb 24,94 15:46  
 Sample Time: Feb 24,94 15:33  
 Method  
 Slope Up 0.500 mV/Sec  
 Slope Down 1.500 mV/Sec  
 Min Area 0.000 mVSec  
 Min Height 0.000 mV  
 Analysis Delay 0.0 sec  
 Window Percent 20.0 %  
 Det Flow 10 ml/min  
 B/F Flow 10 ml/min  
 Aux Flow 0 ml/min  
 Oven Temp 40 C  
 Amb Temp 31 C  
 Max Gain 10  
 Analysis Time 400.0 sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	402.6 mVS	14.9
2	Unknown	4.001 VSec	19.9
3	toluene	0.138 ppb	99.4
4	Unknown	8.653 mVS	118.4
5	Unknown	9.430 mVS	136.4
6	Unknown	19.51 mVS	184.6
7	ethylbenzene	0.942 ppb	210.2
8	o-xylene	0.423 ppb	257.3

## Notes

Operator: Mark Henson  
 Site: 223rd CCSQ  
 Arkansas ANG3  
 Hot Springs, ARK

Sample: nef-004 bh  
 int 1



Time Printed: Feb 24,94 16:10

Sample Time: Feb 24,94 16:02

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	10	
Analysis Time	400.0	sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	880.3 mVS	14.0
2	Unknown	5.074 VSec	20.9
3	toluene	0.132 ppb	99.0
4	Unknown	7.985 mVS	117.8
5	Unknown	7.637 mVS	136.0
6	ethylbenzene	7.349 ppb	185.2
7	o-xylene	0.885 ppb	252.2
8	Unknown	0.239 mVS	328.2

## Notes

Operator: Mark Henson

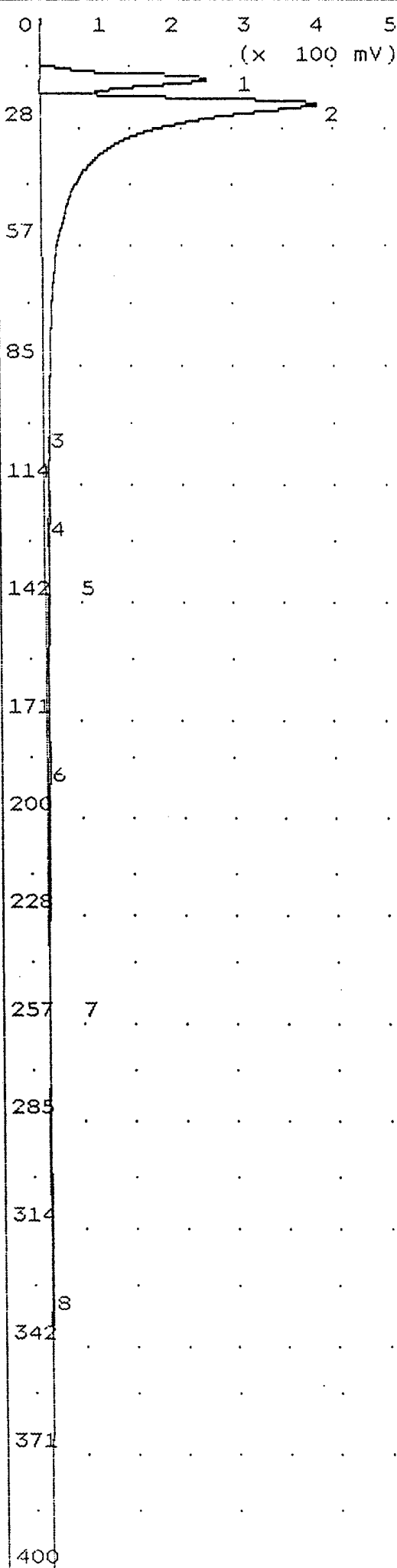
Site: 223rd CCSQ

Arkansas ANG5

Hot Springs, ARK

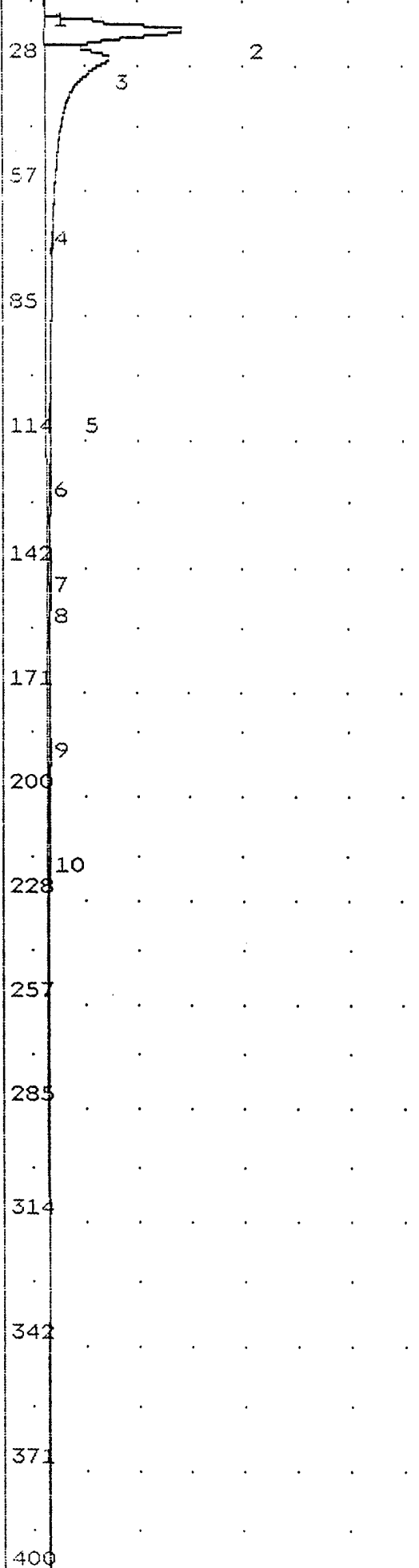
Sample: nef-004 bh

0.0'-1.0' bls td





0 1 2 3 4 5  
(x 100 mV)



Time Printed: Feb 24,94 16:24

Sample Time: Feb 24,94 16:13

## Method

Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
B/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 31 C  
Max Gain 10  
Analysis Time 400.0 sec

## Peak Report

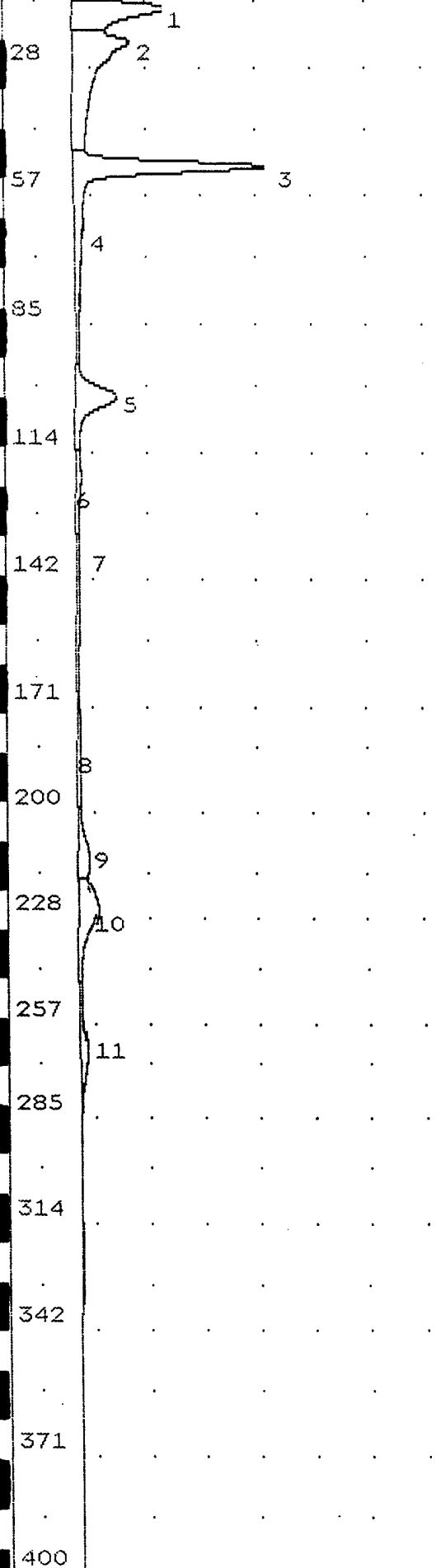
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.582 mVS	4.8
2	Unknown	730.6 mVS	18.0
3	Unknown	2.058 VSec	24.9
4	Unknown	2.548 mVS	65.0
5	toluene	0.192 ppb	102.5
6	Unknown	11.64 mVS	121.6
7	Unknown	4.506 mVS	140.0
8	Unknown	6.866 mVS	147.8
9	Unknown	27.00 mVS	188.0
10	ethylbenzene	1.677 ppb	214.2

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: nef-002 bh  
int 1



0 4 8 12 16 20  
(x 10 mV)

Time Printed: Feb 24,94 16:38

Sample Time: Feb 24,94 16:30

## Method

Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
S/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 10  
Analysis Time 400.0 sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	213.1 mVS	13.5
2	Unknown	317.5 mVS	21.0
3	benzene	9.742 ppb	48.9
4	Unknown	0.356 mVS	61.4
5	toluene	7.003 ppb	100.1
6	Unknown	39.18 mVS	117.3
7	Unknown	45.15 mVS	135.3
8	Unknown	35.62 mVS	183.4
9	ethylbenzene	18.68 ppb	208.8
10	m-p-xylene	41.90 ppb	225.2
11	o-xylene	13.06 ppb	265.8

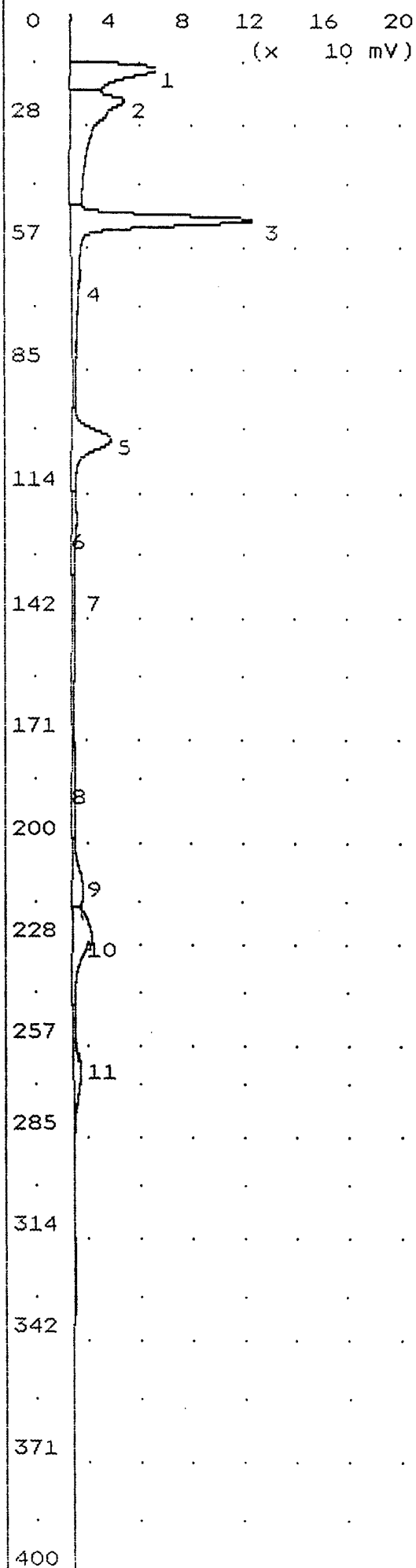
## Notes

Operator: Mark Henson

Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: 50 ppb std recal.





Time Printed: Feb 24,94 16:47  
 Sample Time: Feb 24,94 16:30  
 Method  
 Slope Up 0.500 mV/Sec  
 Slope Down 1.500 mV/Sec  
 Min Area 0.000 mVSec  
 Min Height 0.000 mV  
 Analysis Delay 0.0 sec  
 Window Percent 20.0 %  
 Det Flow 10 ml/min  
 B/F Flow 10 ml/min  
 Aux Flow 0 ml/min  
 Oven Temp 40 C  
 Amb Temp 32 C  
 Max Gain 10  
 Analysis Time 400.0 sec

## Peak Report

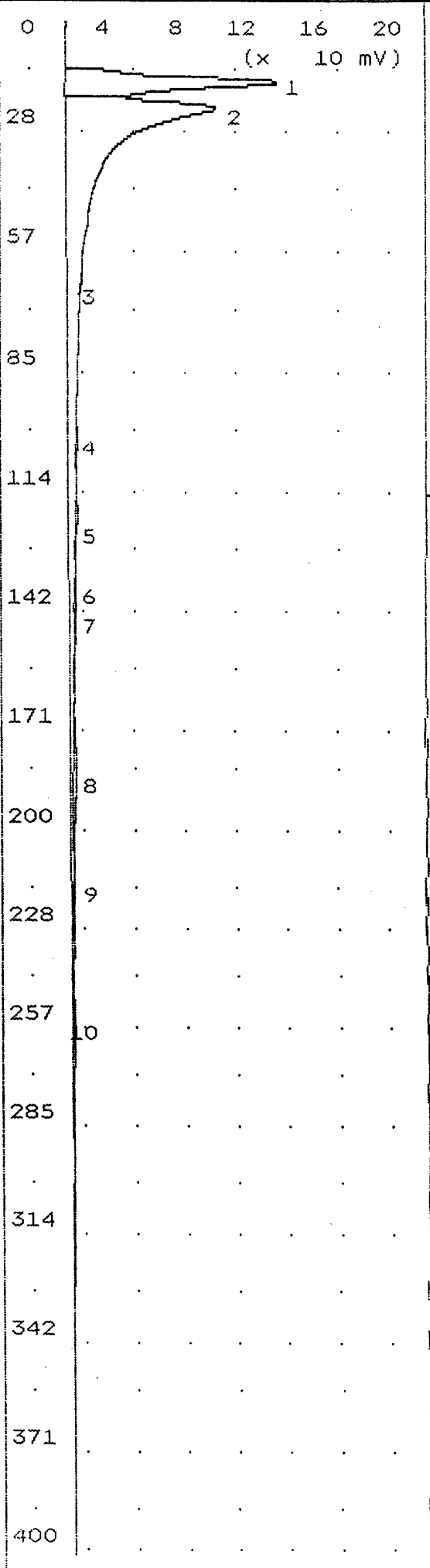
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	213.1 mVS	13.5
2	Unknown	317.5 mVS	21.0
3	benzene	50.00 ppb	48.9
4	Unknown	0.356 mVS	61.4
5	toluene	50.00 ppb	100.1
6	Unknown	39.18 mVS	117.3
7	Unknown	45.15 mVS	135.3
8	Unknown	35.62 mVS	183.4
9	ethylbenzene	50.00 ppb	208.8
10	m-p-xylene	100.0 ppb	225.2
11	o-xylene	50.00 ppb	265.8

## Notes

Operator: Mark Henson  
 Site: 223rd CCSQ  
 Arkansas ANG  
 Hot Springs, ARK

Sample: 50 ppb std recal.





Time Printed: Feb 24, 94 16:59  
 Sample Time: Feb 24, 94 16:51  
 Method  
 Slope Up 0.500 mV/Sec  
 Slope Down 1.500 mV/Sec  
 Min Area 0.000 mVSec  
 Min Height 0.000 mV  
 Analysis Delay 0.0 sec  
 Window Percent 20.0 %  
 Det Flow 10 ml/min  
 B/F Flow 10 ml/min  
 Aux Flow 0 ml/min  
 Oven Temp 40 C  
 Amb Temp 32 C  
 Max Gain 10  
 Analysis Time 400.0 sec

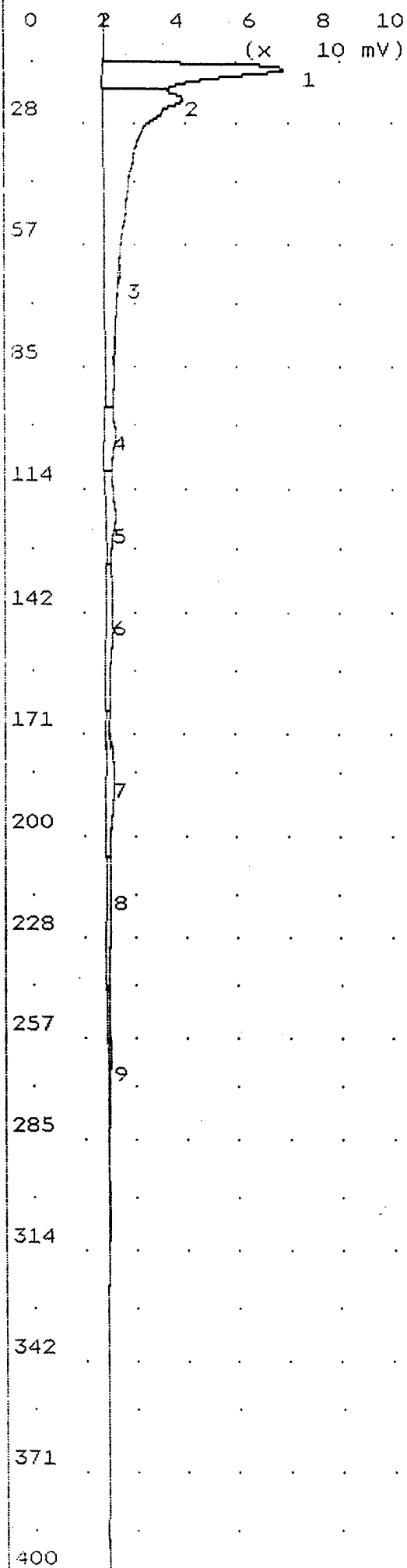
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	444.6 mVS	14.8
2	Unknown	1.730 VSec	21.2
3	Unknown	2.179 mVS	61.3
4	toluene	1.589 ppb	99.3
5	Unknown	8.644 mVS	118.4
6	Unknown	3.694 mVS	136.5
7	Unknown	5.615 mVS	144.6
8	Unknown	22.83 mVS	183.6
9	ethylbenzene	6.711 ppb	211.2
10	o-xylene	3.922 ppb	254.6

Notes

Operator: Mark Henson  
 Site: 223rd CCSQ  
 Arkansas ANG  
 Hot Springs, ARK  
 Sample: nef-003 bh  
 1.0' - 2.0' bls





Time Printed: Feb 24,94 17:16  
 Sample Time: Feb 24,94 17:04  
 Method  
 Slope Up 0.500 mV/Sec  
 Slope Down 1.500 mV/Sec  
 Min Area 0.000 mVSec  
 Min Height 0.000 mV  
 Analysis Delay 0.0 sec  
 Window Percent 20.0 %  
 Det Flow 10 ml/min  
 B/F Flow 10 ml/min  
 Aux Flow 0 ml/min  
 Oven Temp 40 C  
 Amb Temp 32 C  
 Max Gain 10  
 Analysis Time 400.0 sec

## Peak Report

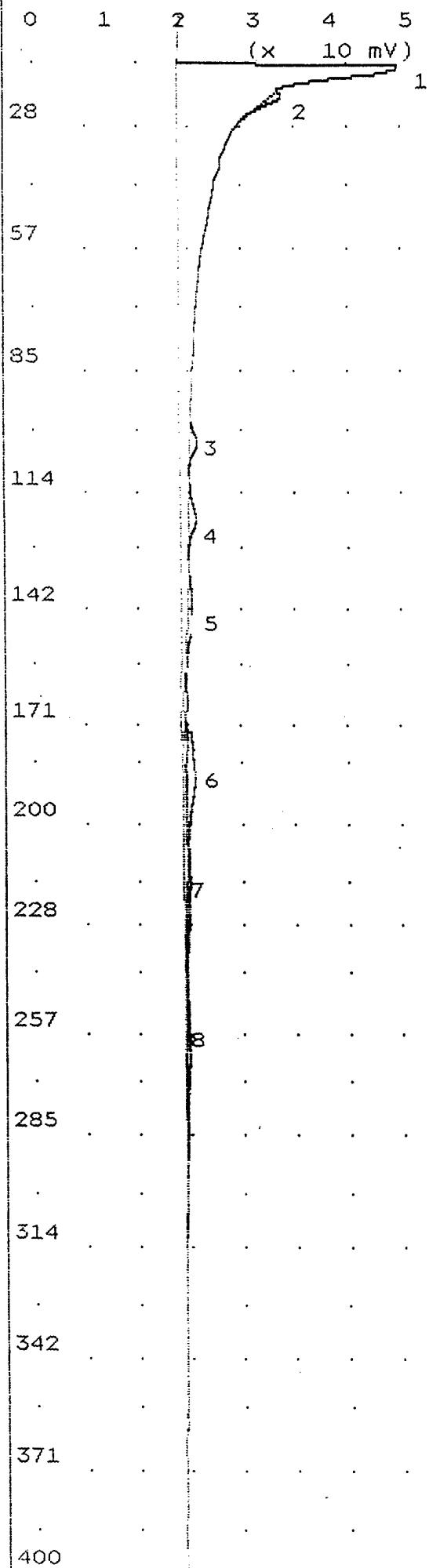
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	232.1 mVS	13.7
2	Unknown	477.8 mVS	20.9
3	Unknown	0.094 mVS	61.4
4	toluene	12.65 ppb	99.6
5	Unknown	45.71 mVS	118.4
6	Unknown	52.69 mVS	144.2
7	Unknown	56.01 mVS	185.6
8	ethylbenzene	25.13 ppb	211.0
9	o-xylene	16.47 ppb	261.3

## Notes

Operator: Mark Henson  
 Site: 223rd CCSQ  
 Arkansas ANG  
 Hot Springs, ARK

Sample: nef-003 bh  
 2.0' - 3.0' bls





Time Printed: Feb 24,94 17:28  
Sample Time: Feb 24,94 17:19  
Method  
Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
B/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 10  
Analysis Time 400.0 sec

## Peak Report

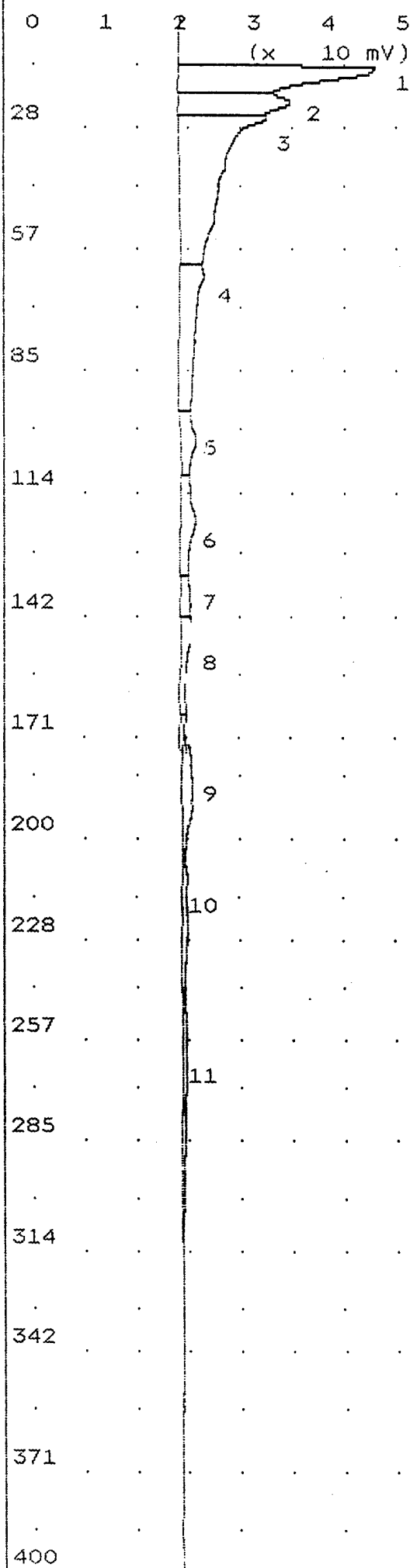
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	623.7 mVS	12.8
2	Unknown	3.708 mVS	19.5
3	toluene	1.625 ppb	99.8
4	Unknown	7.027 mVS	118.9
5	Unknown	7.588 mVS	144.2
6	Unknown	20.00 mVS	185.4
7	ethylbenzene	6.185 ppb	213.0
8	o-xylene	3.291 ppb	258.4

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG5  
Hot Springs, ARK

Sample: air blank





Time Printed: Feb 24,94 17:39  
Sample Time: Feb 24,94 17:32  
Method  
Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 0.000 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 10 ml/min  
B/F Flow 10 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 10  
Analysis Time 400.0 sec

## Peak Report

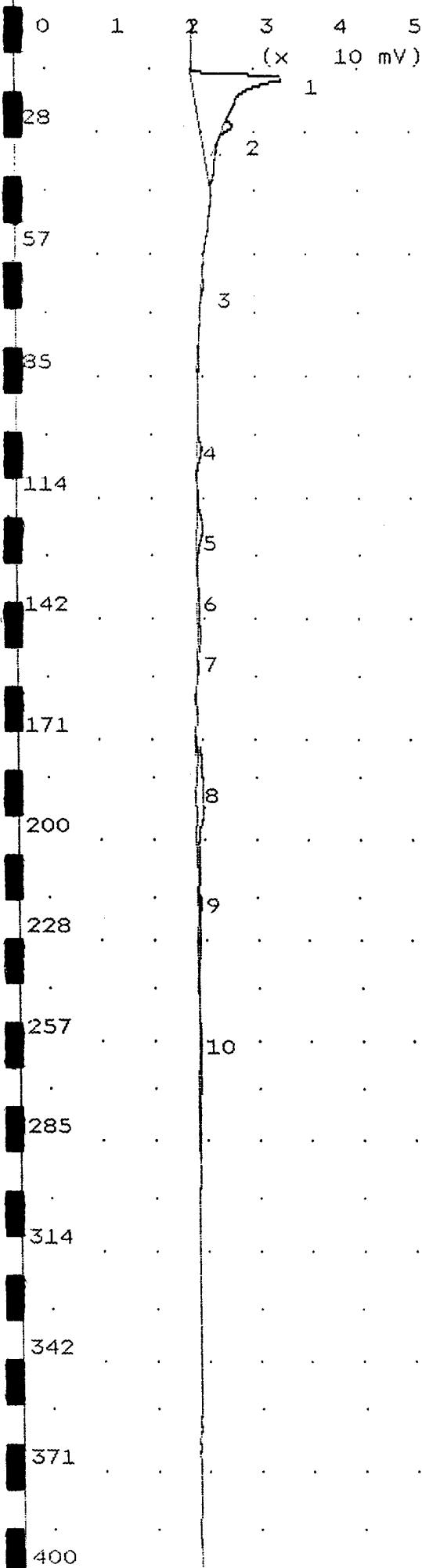
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	137.3 mVS	12.6
2	Unknown	72.67 mVS	20.6
3	Unknown	206.5 mVS	24.3
4	Unknown	76.43 mVS	61.5
5	toluene	8.766 ppb	100.0
6	Unknown	33.04 mVS	118.6
7	Unknown	11.60 mVS	137.0
8	Unknown	22.08 mVS	145.4
9	Unknown	42.09 mVS	186.8
10	ethylbenzene	17.01 ppb	211.0
11	o-xylene	12.19 ppb	260.0

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: cts-001 bh  
int 1





Time Printed: Feb 24,94 17:51

Sample Time: Feb 24,94 17:43

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

## Peak Report

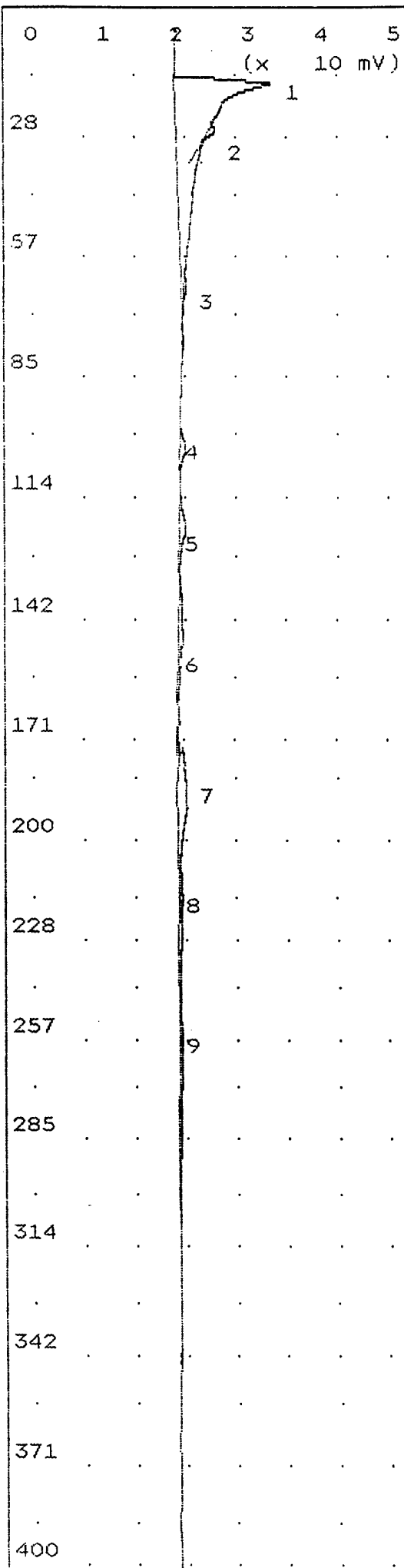
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	105.5 mVS	14.0
2	Unknown	2.153 mVS	25.2
3	Unknown	0.526 mVS	62.1
4	toluene	0.873 ppb	100.5
5	Unknown	5.448 mVS	119.6
6	Unknown	2.426 mVS	137.7
7	Unknown	3.653 mVS	146.0
8	Unknown	15.86 mVS	187.0
9	ethylbenzene	4.642 ppb	213.4
10	o-xylene	2.638 ppb	258.6

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: nef-001 bh  
int 1





Time Printed: Feb 24,94 18:11

Sample Time: Feb 24,94 17:56

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	0.000	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	10	
Analysis Time	400.0	sec

## Peak Report

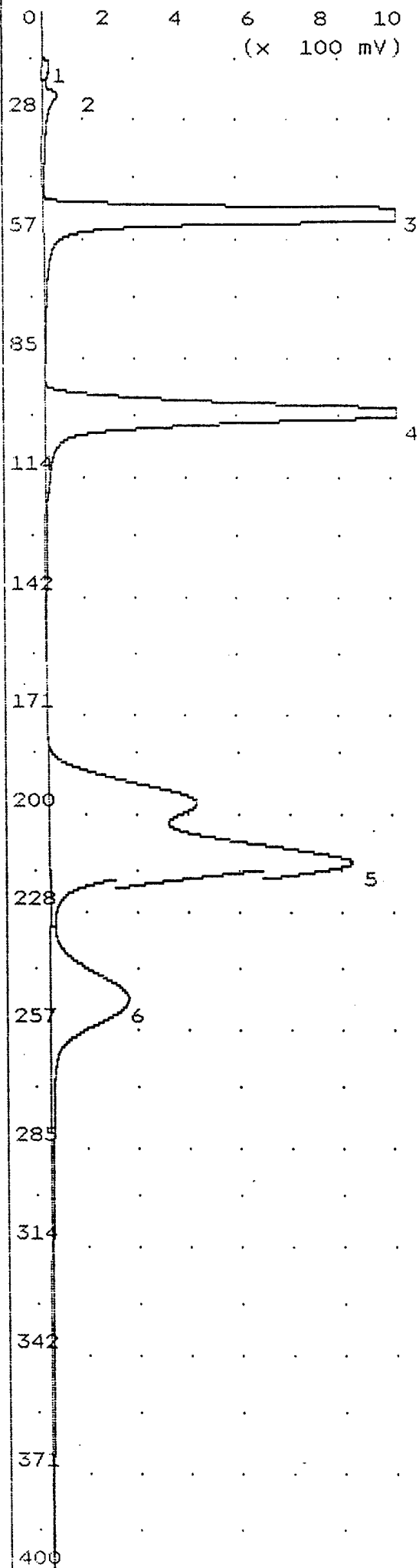
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	179.6 mVS	13.8
2	Unknown	1.524 mVS	25.0
3	Unknown	0.847 mVS	62.0
4	toluene	1.263 ppb	100.4
5	Unknown	5.933 mVS	119.0
6	Unknown	6.697 mVS	145.4
7	Unknown	21.72 mVS	186.8
8	ethylbenzene	7.000 ppb	213.8
9	o-xylene	6.564 ppb	255.2

## Notes

Operator: Mark Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, ARK

Sample: nef-001 bh  
int 1.75-2.75





Time Printed: Feb 25,94 08:49  
Sample Time: Feb 25,94 08:25

Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	29	C
Max Gain	2	
Analysis Time	400.0	sec

## Peak Report

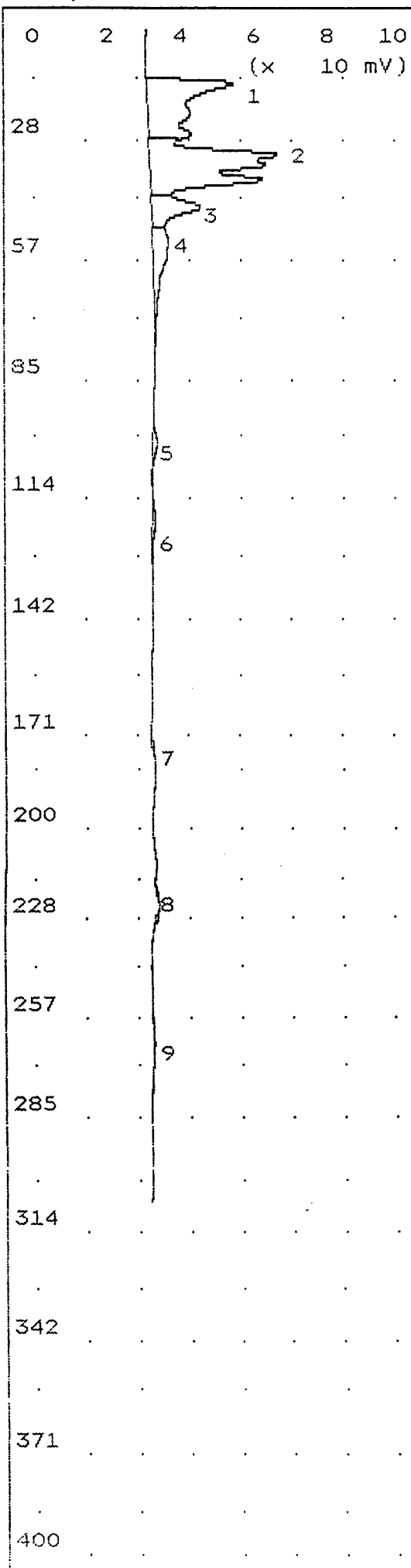
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	83.49 mVS	13.9
2	Unknown	308.9 mVS	20.8
3	benzene	1.000 ppm	49.4
4	toluene	1.000 ppm	97.0
5	Unknown	15.27 VSec	209.8
6	ebenz/m,p xylene	3.001 ppm	248.0

## Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

1 ppm btex std (initial cal.)





Time Printed: Feb 25,94 10:43

Sample Time: Feb 25,94 10:37

## Method

Slope Up 2.000 mV/Sec

Slope Down 6.000 mV/Sec

Min Area 100.0 mVSec

Min Height 0.000 mV

Analysis Delay 0.0 sec

Window Percent 20.0 %

Det Flow 15 ml/min

B/F Flow 15 ml/min

Aux Flow 0 ml/min

Oven Temp 40 C

Amb Temp 30 C

Max Gain 2

Analysis Time 400.0 sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	191.5 mVS	13.2
2	Unknown	286.8 mVS	30.0
3	Unknown	63.51 mVS	42.8
4	Unknown	53.72 mVS	50.4
5	Unknown	5.865 mVS	98.2
6	Unknown	4.872 mVS	118.4
7	Unknown	14.00 mVS	180.8
8	Unknown	45.07 mVS	222.4
9	Unknown	14.00 mVS	263.7

## Notes

Operator: Mark D. Henson

Site: 223rd CCSQ  
Arkansas ANG5

Hot Springs, AR

sample: ods-004 bh

int 1



Time Printed: Feb 25,94 11:11

Sample Time: Feb 25,94 10:47

Method

Slope Up 2.000 mV/Sec  
Slope Down 6.000 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
S/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 31 C  
Max Gain 2  
Analysis Time 400.0 sec

Peak Report

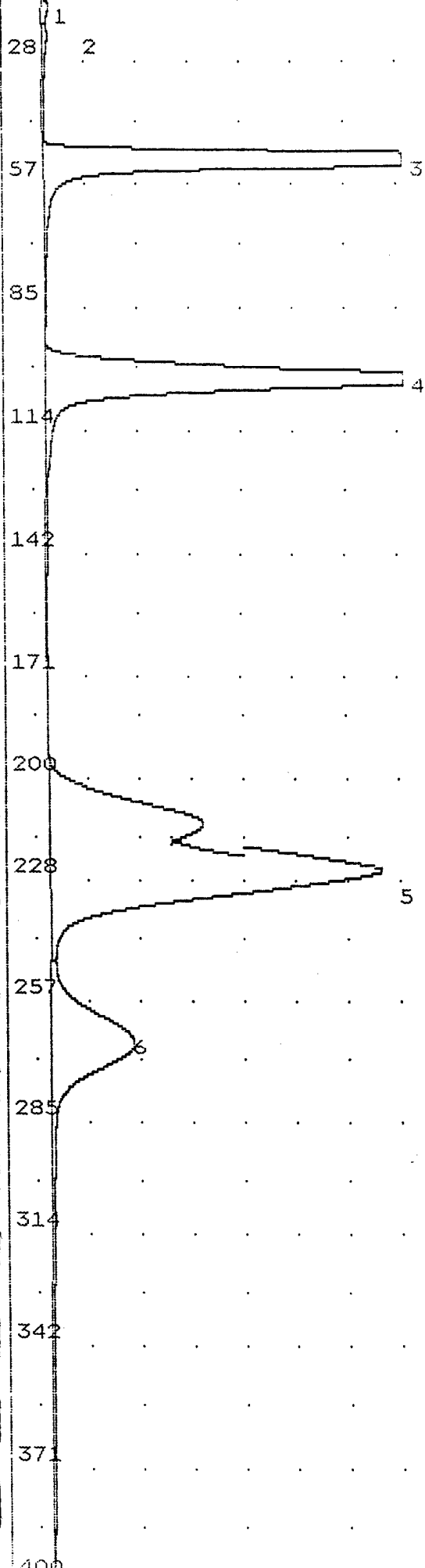
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	83.49 mVS	13.8
2	Unknown	150.6 mVS	20.3
3	benzene	1.000 ppm	49.4
4	toluene	1.000 ppm	100.1
5	ebenz/m,p xylene	3.000 PPM1	224.2
6	o-xylene	1.000 PPM1	265.0

Notes

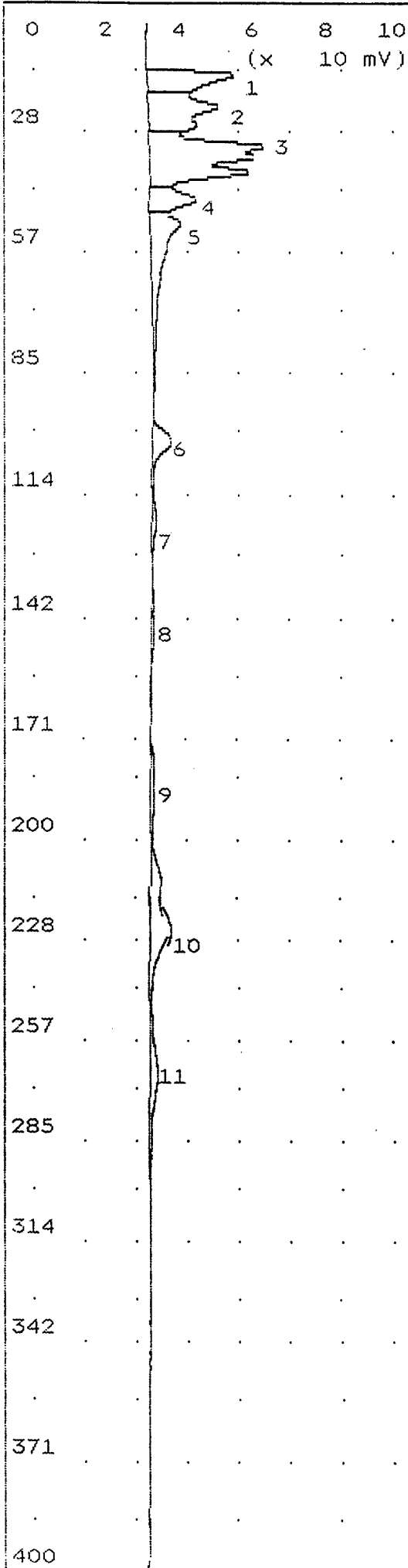
Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: 1 ppm btex std (initial  
cal. done over to show o-xylene  
@ 1ppm).

0 2 4 6 8 10  
(x 100 mV)







Time Printed: Feb 25,94 11:45  
Sample Time: Feb 25,94 11:21  
Method  
Slope Up 1.500 mV/Sec  
Slope Down 4.500 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

## Peak Report

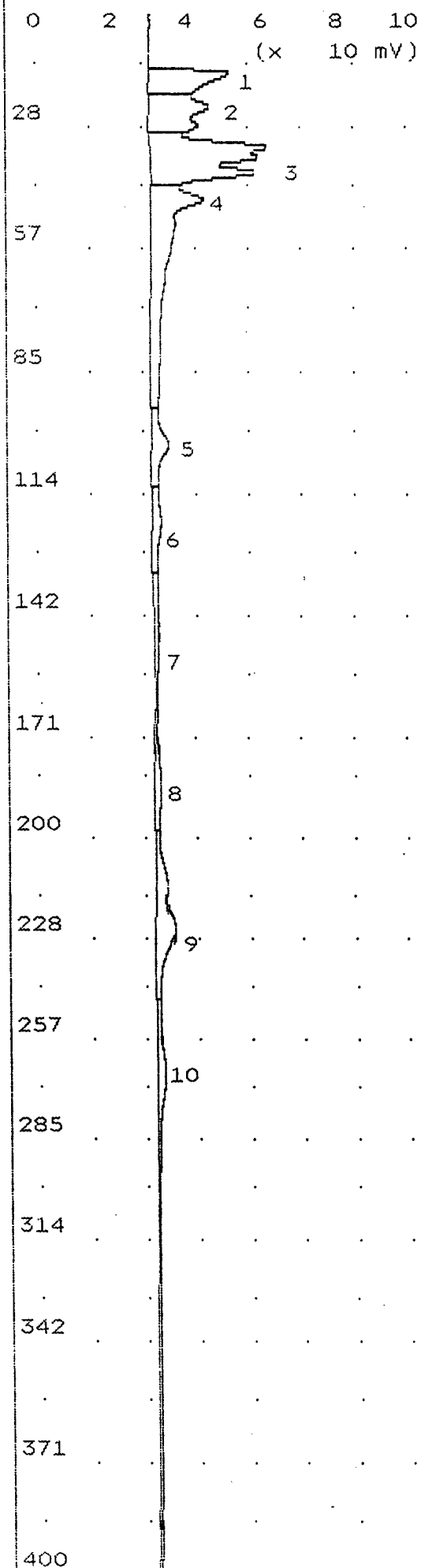
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	101.8 mVS	13.1
2	Unknown	136.9 mVS	20.8
3	Unknown	266.1 mVS	30.2
4	Unknown	57.31 mVS	42.6
5	Unknown	96.97 mVS	48.6
6	Unknown	30.83 mVS	99.3
7	Unknown	9.088 mVS	117.6
8	Unknown	7.524 mVS	145.0
9	Unknown	17.25 mVS	183.8
10	ebenz/m,p xylene	20.69 ppb	225.0
11	Unknown	34.09 mVS	262.9

## Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: ods-004 bh  
int 1 (2nd injection)





Time Printed: Feb 25,94 11:59  
Sample Time: Feb 25,94 11:49  
Method  
Slope Up 0.100 mV/Sec  
Slope Down 0.100 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	98.43 mVS	13.7
2	Unknown	115.9 mVS	21.8
3	Unknown	270.4 mVS	31.3
4	benzene	27.67 ppb	43.6
5	Unknown	43.64 mVS	100.1
6	Unknown	32.89 mVS	117.8
7	Unknown	36.55 mVS	145.4
8	Unknown	37.94 mVS	181.6
9	ebenz/m,p xylene	22.44 ppb	225.0
10	Unknown	72.46 mVS	266.4

## Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: ods-002 bh  
int 1



0 2 4 6 8 10  
(x 10 mV)

Time Printed: Feb 25,94 12:09

Sample Time: Feb 25,94 12:02

Method

Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

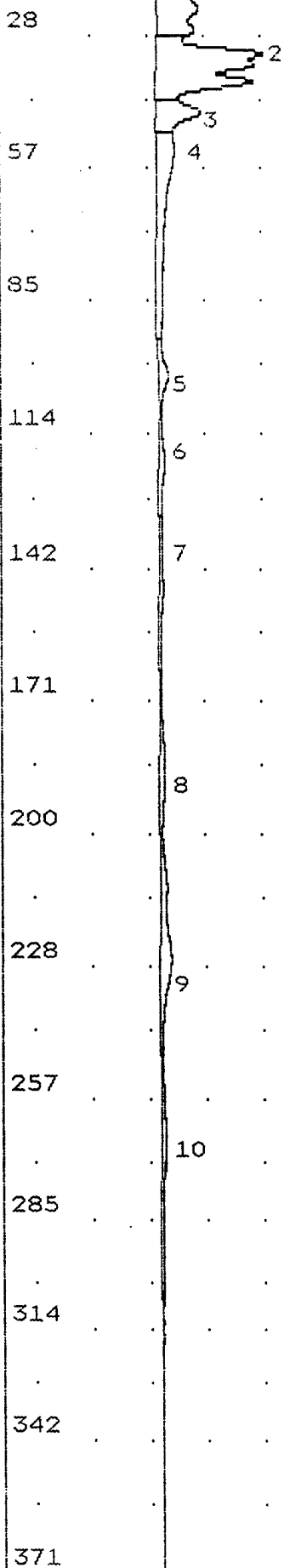
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	161.1 mVS	12.5
2	Unknown	228.4 mVS	30.5
3	Unknown	53.67 mVS	43.0
4	Unknown	96.31 mVS	51.0
5	Unknown	23.72 mVS	100.1
6	Unknown	20.75 mVS	116.6
7	Unknown	21.84 mVS	136.6
8	Unknown	24.45 mVS	183.8
9	Unknown	60.00 mVS	224.8
10	Unknown	22.85 mVS	264.2

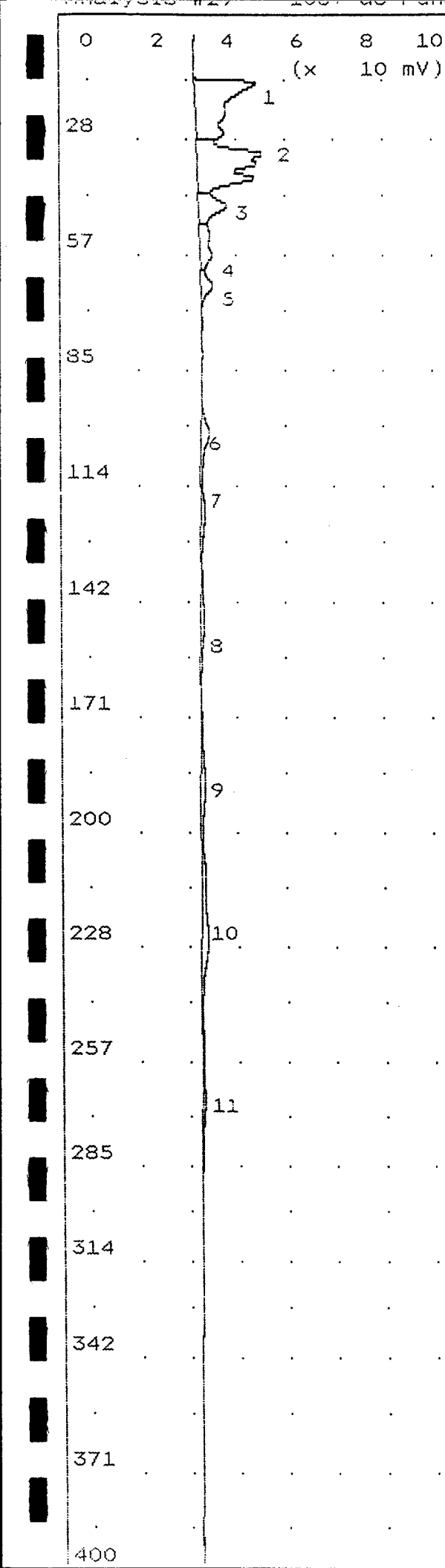
Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: ods-001 bh  
0.0-1.0







Time Printed: Feb 25,94 12:23  
Sample Time: Feb 25,94 12:15  
Method  
Slope Up 2.500 mV/Sec  
Slope Down 7.500 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	154.9 mVS	12.2
2	Unknown	159.0 mVS	30.1
3	Unknown	40.98 mVS	42.6
4	Unknown	30.96 mVS	54.6
5	Unknown	18.72 mVS	62.4
6	Unknown	16.45 mVS	98.6
7	Unknown	10.72 mVS	116.6
8	Unknown	15.27 mVS	145.8
9	Unknown	19.03 mVS	182.4
10	Unknown	41.03 mVS	222.2
11	Unknown	13.16 mVS	264.0

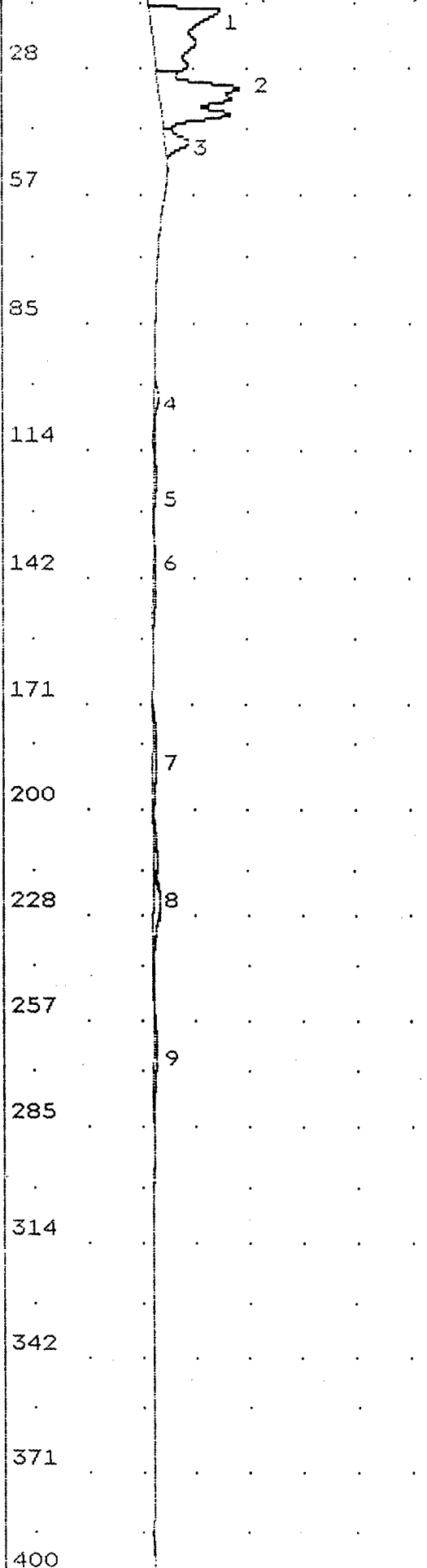
#### Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: ods-001 bh  
4.0-5.0 int 2  
br 5.0



0 2 4 6 8 10  
(x 10 mV)



Time Printed: Feb 25,94 12:54

Sample Time: Feb 25,94 12:29

## Method

Slope Up 3.000 mV/Sec  
Slope Down 9.000 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

## Peak Report

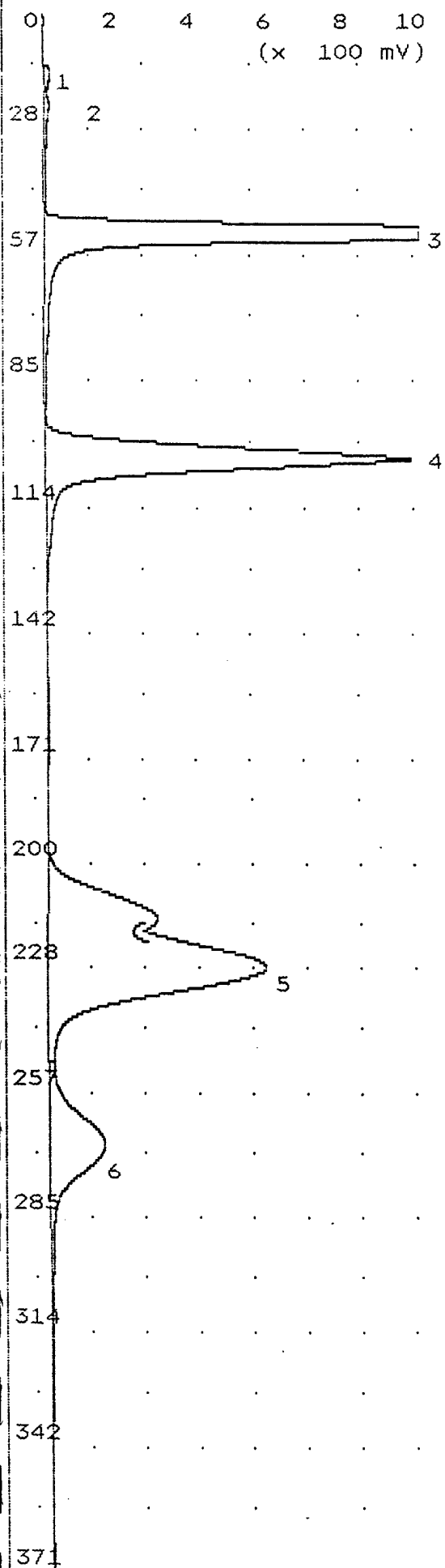
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	170.7 mVS	13.2
2	Unknown	171.7 mVS	30.9
3	Unknown	24.77 mVS	43.4
4	Unknown	6.840 mVS	100.0
5	Unknown	6.178 mVS	117.8
6	Unknown	6.253 mVS	133.7
7	Unknown	12.40 mVS	183.2
8	Unknown	39.10 mVS	222.8
9	Unknown	13.30 mVS	263.7

## Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: ods-003 bh  
0.0-0.8





Time Printed: Feb 25,94 14:26

Sample Time: Feb 25,94 12:57

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	2	
Analysis Time	400.0	sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	82.62 mVS	14.2
2	Unknown	174.0 mVS	21.3
3	benzene	1.000 ppm	50.1
4	toluene	1.000 ppm	101.2
5	ebenz/m,p xylene	3.000 PPM1	226.6
6	o-xylene	1.003 PPM1	266.9

PPM1 = Alarm 1 PPM2 = Alarm2

## Notes

Operator: Mark D. Henson

Site: 223rd CCSQ

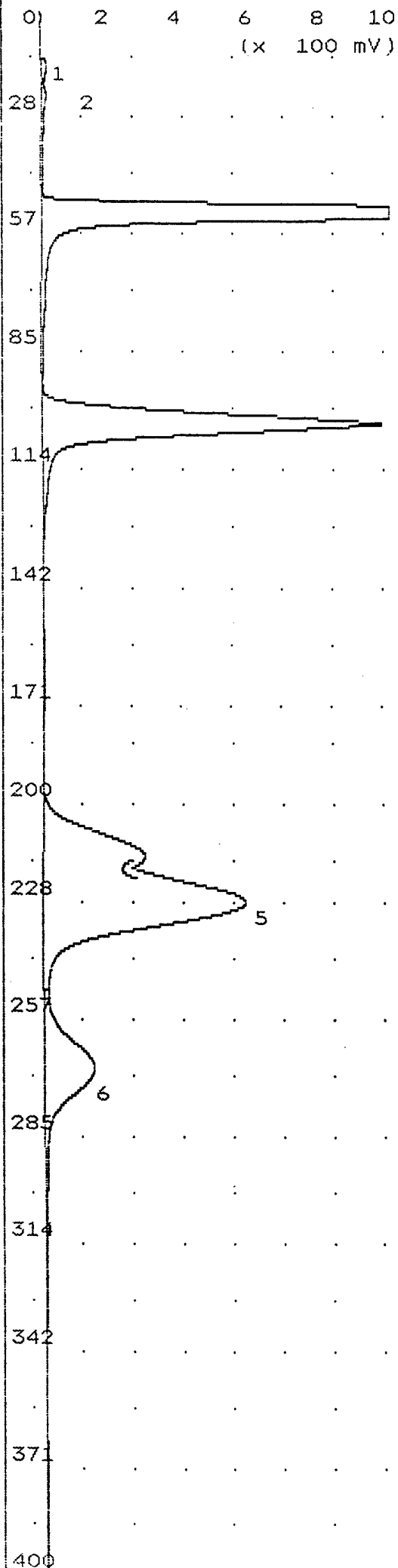
Arkansas ANG  
Hot Springs, AR

sample: 1 ppm btex std recal.

~~before~~ reintegration

after





Time Printed: Feb 25,94 14:58  
Sample Time: Feb 25,94 12:57  
Method  
Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 31 C  
Max Gain 2  
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	82.62 mVS	14.2
2	Unknown	174.0 mVS	21.3
3	benzene	1.000 ppm	50.1
4	toluene	1.000 ppm	101.2
5	ebenz/m,p xylene	3.000 PPM1	226.6
6	o-xylene	1.003 PPM1	266.9

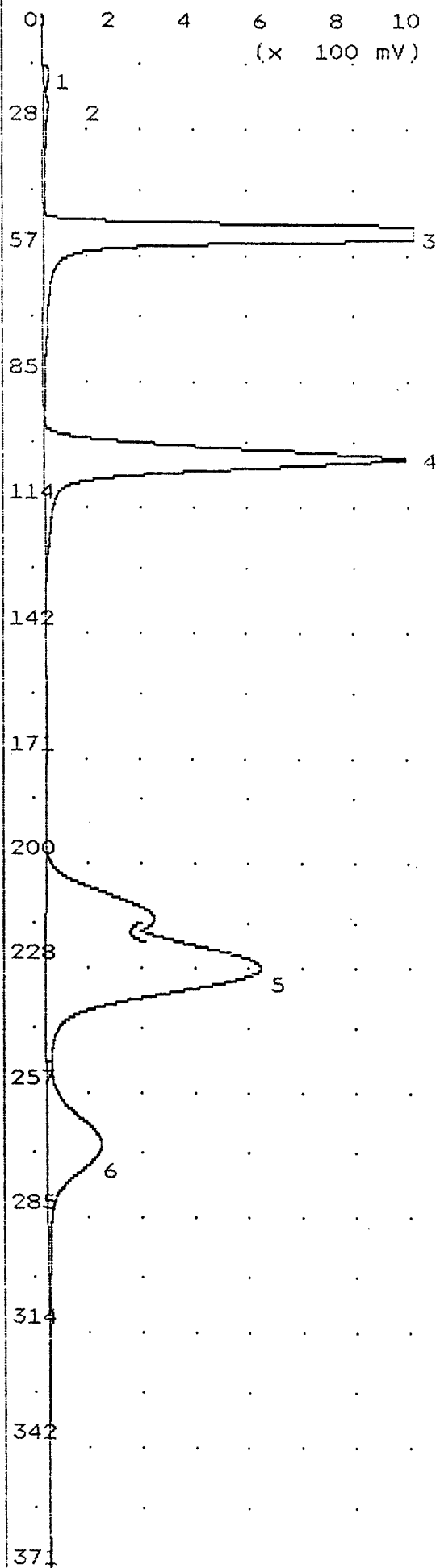
PPM1 = Alarm 1 PPM2 = Alarm2

#### Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: 1 ppm btex std recal.  
after reintegration





Time Printed: Feb 25,94 14:23

Sample Time: Feb 25,94 12:57

## Method

Slope Up	0.500	mV/Sec
Slope Down	1.500	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	31	C
Max Gain	2	
Analysis Time	400.0	sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	82.62 mVS	14.2
2	Unknown	174.0 mVS	21.3
3	benzene	921.0 ppb	50.1
4	toluene	752.8 ppb	101.2
5	ebenz/m,p xylene	2.003 PPM1	226.6
6	o-xylene	649.0 ppb	266.9

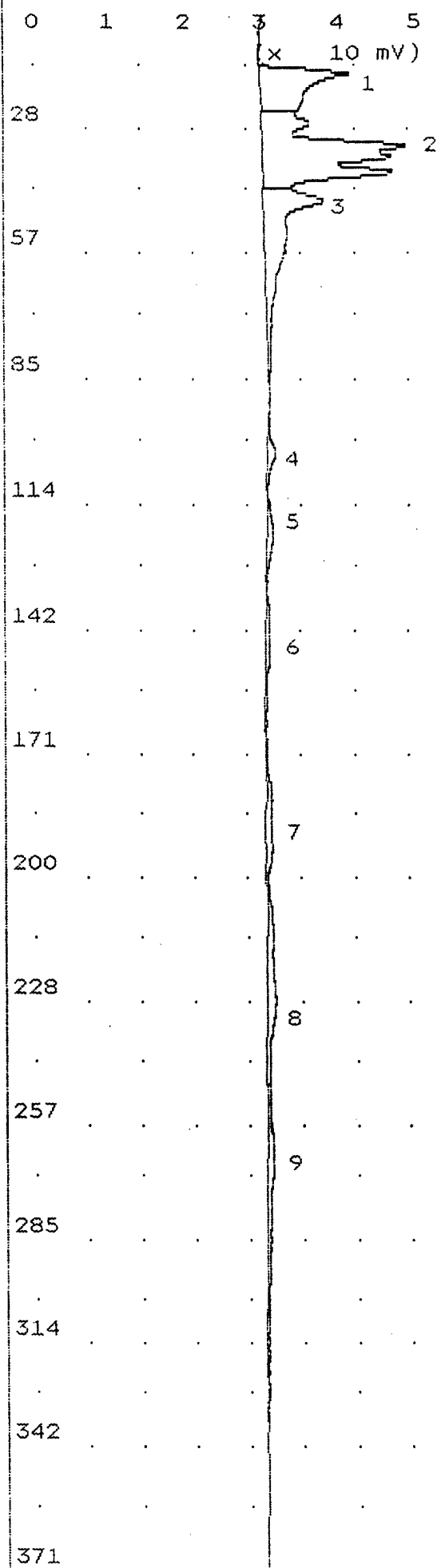
PPM1 = Alarm 1 PPM2 = Alarm2

## Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: 1 ppm btex std recal.  
before reintegration





Time Printed: Feb 25,94 15:18

Sample Time: Feb 25,94 15:06

## Method

Slope Up 0.500 mV/Sec

Slope Down 1.500 mV/Sec

Min Area 100.0 mVSec

Min Height 0.000 mV

Analysis Delay 0.0 sec

Window Percent 20.0 %

Det Flow 15 ml/min

S/F Flow 15 ml/min

Aux Flow 0 ml/min

Oven Temp 40 C

Amb Temp 32 C

Max Gain 2

Analysis Time 400.0 sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	73.29 mVS	13.6
2	Unknown	179.2 mVS	30.6
3	Unknown	85.19 mVS	43.1
4	Unknown	5.131 mVS	100.0
5	Unknown	6.983 mVS	116.4
6	Unknown	7.493 mVS	143.6
7	Unknown	15.81 mVS	185.6
8	Unknown	29.87 mVS	225.8
9	Unknown	22.77 mVS	266.1

## Notes

Operator: Mark D. Henson  
Site: 223rd CCSQArkansas ANGCS  
Hot Springs, AR

sample: nwd-001 bh int 1



**APPENDIX D**

**SITE INSPECTION DERIVED WASTE MANAGEMENT**



**Table 1**  
**Site Inspection Derived Waste**  
**Drum Containing Soil Cuttings From**  
**CTS-001BH, CTS-002BH, and CTS-003BH Boreholes**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Action Level Concentration* (mg/kg)
<b>VOCs</b>		
m,p-Xylenes	.01085	10
Methylene Chloride†	.00961	NA
Acetone†	.39291	NA
o-Xylene	.00532	10
<b>Metals</b>		
Antimony	12.34	NA
Arsenic	10.21	100
Beryllium	0.86	NA
Cadmium	1.55	10
Chromium	16.31	100
Copper	23.48	2,000
Lead	26.93	100
Mercury	0.12	4
Nickel	23.46	NA
Selenium	9.44	20
Zinc	74.55	10,000
<b>SVOCs</b>		
Bis(2-ethylhexyl)phthalate†	0.66793	NA
TPH	21.25	100

CTS – Current Temporary Waste Storage Area of Concern (AOC).

BH – Borehole.

mg/kg – milligrams per kilogram.

NA – Not available.

VOCs – Volatile Organic Compounds.

SVOCs – Semivolatile Organic Compounds.

TPH – Total Petroleum Hydrocarbons.

\*The applicable action level for VOCs in soil is 10 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX). Similarly for TPH in soil the action level is 100 mg/kg TPH. The action levels for metals in soil are derived from an estimate of the concentration in soil which, upon performing a TCLP analysis, would not exceed Federal Primary Drinking Water Standards (FPDWS). Therefore, those values are obtained by multiplying FPDWS MCLs by 2000. This factor represents a combination of the 20x dilution factor employed in TCLP analysis and a 100x dilution factor representing dilution of a contaminant in groundwater.

†Suspected laboratory contaminant.



**Table 2**  
**Site Inspection Derived Waste**  
**Drum Containing Soil Cuttings From**  
**NWD-002BH, NWD-003BH, NWD-004BH, ODS-002BH, and ODS-004BH Boreholes**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

Analyte	Maximum Concentration in Soil Cuttings (mg/kg)	Standard Concentration (mg/kg)
<b>VOCs</b>		
Methylene Chloride†	0.01933	NA
<b>Metals</b>		
Antimony	3.68	NA
Arsenic	13.48	100
Beryllium	0.91	NA
Cadmium	0.75	10
Chromium	14.87	100
Copper	23.53	2,000
Lead	31.28	100
Mercury	0.22	4
Nickel	13.7	NA
Selenium	0.98	20
Zinc	39.75	10,000
<b>SVOCs</b>		
Pyrene	0.96666	NA

NWD – Northwest Ditch Area of Concern (AOC).

ODS – Old Drum Storage AOC.

BH – Borehole.

mg/kg – milligrams per kilogram.

NA – Not available.

VOCs – Volatile Organic Compounds.

SVOCs – Semivolatile Organic Compounds.

TPH – Total Petroleum Hydrocarbons.

\*The applicable action level for VOCs in soil is 10 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX). Similarly for TPH in soil the action level is 100 mg/kg TPH. The action levels for metals in soil are derived from an estimate of the concentration in soil which, upon performing a TCLP analysis, would not exceed Federal Primary Drinking Water Standards (FPDWS). Therefore, those values are obtained by multiplying FPDWS MCLs by 2000. This factor represents a combination of the 20x dilution factor employed in TCLP analysis and a 100x dilution factor representing dilution of a contaminant in groundwater.

†Suspected laboratory contaminant.



**APPENDIX E**  
**ANALYTICAL REPORTS**



# **Appendix E** **Summary of Volatile Organic Compounds Detected in Soil/Water Samples** **223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

(Results in micrograms per kilogram unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	NEF-005 INT 1 2/24/94 9402010531	NEF-005 INT 2 2/24/94 9402010532	CTS-003 INT 1 2/24/94 9402010533	CTS-003 INT 2 2/24/94 9402010534	CTS-002 INT 1 2/24/94 9402010535	CTS-002 INT 2 2/24/94 9402010536
Volatile Organics	Soil	Soil	Soil	Soil	Soil	Soil
Chloromethane	10U	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U	10U
Methylene Chloride	5U	5U	9.42	9.61	5U	5U
Acetone	100U	100U	100U	100U	392.91	122.46
Carbon Disulfide	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U
2-Butanone	100U	100U	100U	100U	100U	100U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone	50U	50U	50U	50U	50U	50U
2-Hexanone	50U	50U	50U	50U	50U	50U
Tetrachloroethene	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U
Xylenes (total)	7.38	7.85	7.40	7.25	5U	16.17

NEF – Northeast and East Fence Line Area of Concern (AOC).

CTS – Current Temporary Waste Storage AOC.

INT – Interval.

U – Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Volatile Organic Compounds Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in micrograms per kilogram unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	CTS-001 INT 1 2/24/94 9402010537	NEF-004 INT 1 2/24/94 9402010538	NEF-003 INT 1 2/24/94 9402010539	NEF-003 INT 2 2/24/94 9402010540	NEF-002 INT 1 2/24/94 9402010541	NEF-002 INT 2 2/24/94 9402010542
Volatile Organics	Soil	Soil	Soil	Soil	Soil	Soil
Chloromethane	10U	10U	10U	10U	10U	10U
Bromomethane	10U	10U	10U	10U	10U	10U
Vinyl Chloride	10U	10U	10U	10U	10U	10U
Chloroethane	10U	10U	10U	10U	10U	10U
Methylene Chloride	9.40	17.02	5U	5U	15.69	5U
Acetone	100U	100U	299.35	100U	100U	100U
Carbon Disulfide	5U	5U	5U	5U	5U	5U
1,1-Dichloroethene	5U	5U	5U	5U	5U	5U
1,1-Dichloroethane	5U	5U	5U	5U	5U	5U
1,2-Dichloroethene (total)	5U	5U	5U	5U	5U	5U
Chloroform	5U	5U	5U	5U	5U	5U
1,2-Dichloroethane	5U	5U	5U	5U	5U	5U
2-Butanone	100U	100U	100U	100U	100U	100U
1,1,1-Trichloroethane	5U	5U	5U	5U	5U	5U
Carbon Tetrachloride	5U	5U	5U	5U	5U	5U
Bromodichloromethane	5U	5U	5U	5U	5U	5U
1,2-Dichloropropane	5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Trichloroethene	5U	5U	5U	5U	5U	5U
Dibromochloromethane	5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane	5U	5U	5U	5U	5U	5U
Benzene	5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene	5U	5U	5U	5U	5U	5U
Bromoform	5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone	5U	5U	5U	5U	5U	5U
2-Hexanone	50U	50U	50U	50U	50U	50U
Tetrachloroethene	5U	5U	5U	5U	5U	5U
1,1,2,2-Tetrachloroethane	5U	5U	5U	5U	5U	5U
Toluene	5U	5U	5U	5U	5U	5U
Chlorobenzene	5U	5U	5U	5U	5U	5U
Ethylbenzene	5U	5U	5U	5U	5U	5U
Styrene	5U	5U	5U	5U	5U	5U
Xylenes (total)	5U	5U	5U	5U	5U	5U

CTS - Current Temporary Waste Storage Area of Concern (AOC).  
NEF - Northeast and East Fence Line AOC.

INT - Interval.

U - Compound analyzed for but not detected. Number indicates detection limit.



# **Appendix E** **Summary of Volatile Organic Compounds Detected in Soil/Water Samples** **223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

(Results in micrograms per kilogram unless otherwise noted.)

Volatile Organics	Matrix	NEF-001 INT 1 2/24/94 9402010543	NEF-001 INT 2 2/24/94 9402010544	ODS-004BH INT 1 2/24/94 9402010551	ODS-002BH INT 1 2/25/94 9402010552	ODS-001BH INT 1 2/25/94 9402010553	ODS-001BH INT 2 2/25/94 9402010554
		Soil	Soil	Soil	Soil	Soil	Soil
Chloromethane		10U	10U	10U	10U	10U	10U
Bromomethane		10U	10U	10U	10U	10U	10U
Vinyl Chloride		10U	10U	10U	10U	10U	10U
Chloroethane		10U	10U	10U	10U	10U	10U
Methylene Chloride		15.42	15.77	17.53	17.80	16.04	17.56
Acetone		100U	100U	100U	100U	100U	100U
Carbon Disulfide		5U	5U	5U	5U	5U	5U
1,1-Dichloroethene		5U	5U	5U	5U	5U	5U
1,1-Dichloroethane		5U	5U	5U	5U	5U	5U
1,2-Dichloroethene (total)		5U	5U	5U	5U	5U	5U
Chloroform		5U	5U	5U	5U	5U	5U
1,2-Dichloroethane		5U	5U	5U	5U	5U	5U
2-Butanone		100U	100U	100U	100U	100U	100U
1,1,1-Trichloroethane		5U	5U	5U	5U	5U	5U
Carbon Tetrachloride		5U	5U	5U	5U	5U	5U
Bromodichloromethane		5U	5U	5U	5U	5U	5U
1,2-Dichloropropane		5U	5U	5U	5U	5U	5U
trans-1,3-Dichloropropene		5U	5U	5U	5U	5U	5U
Trichloroethene		5U	5U	5U	5U	5U	5U
Dibromochloromethane		5U	5U	5U	5U	5U	5U
1,1,2-Trichloroethane		5U	5U	5U	5U	5U	5U
Benzene		5U	5U	5U	5U	5U	5U
cis-1,3-Dichloropropene		5U	5U	5U	5U	5U	5U
Bromoform		5U	5U	5U	5U	5U	5U
4-Methyl-2-Pentanone		5U	5U	5U	5U	5U	5U
2-Hexanone		50U	50U	50U	50U	50U	50U
Tetrachloroethene		50U	50U	50U	50U	50U	50U
1,1,2,2-Tetrachloroethane		5U	5U	5U	5U	5U	5U
Toluene		5U	5U	5U	5U	5U	5U
Chlorobenzene		5U	5U	5U	5U	5U	5U
Ethylbenzene		5U	5U	5U	5U	5U	5U
Styrene		5U	5U	5U	5U	5U	5U
Xylenes (total)		5U	5U	5U	5U	5U	5U

NEF – Northeast Fence Line Area of Concern (AOC).

ODS – Old Drum Storage AOC.

BH – Borehole.

INT – Interval.

U – Compound analyzed for but not detected. Number indicates detection limit.



# **Appendix E** **Summary of Volatile Organic Compounds Detected in Soil/Water Samples** **223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas** (Results in micrograms per kilogram unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	Volatiles Organics	Matrix	ODS-003BH INT 1 2/25/94 9402010555	NWD-001BH INT 1 2/25/94 9402010556	NWD-002BH INT 1 2/25/94 9402010557	NWD-002 INT 2 2/25/94 9402010558	NWD-003BH INT 1 2/25/94 9402010559	NWD-003BH INT 2 2/25/94 9402010560
			Soil	Soil	Soil	Soil	Soil	Soil
	Chloromethane		10U	10U	10U	10U	10U	10U
	Bromomethane		10U	10U	10U	10U	10U	10U
	Vinyl Chloride		10U	10U	10U	10U	10U	10U
	Chloroethane		10U	10U	10U	10U	10U	10U
	Methylene Chloride		17.09	16.84	16.41	17.79	5U	18.23
	Acetone		100U	341.50	100U	100U	100U	100U
	Carbon Disulfide		5U	5U	5U	5U	5U	5U
	1,1-Dichloroethene		5U	5U	5U	5U	5U	5U
	1,1-Dichloroethane		5U	5U	5U	5U	5U	5U
	1,2-Dichloroethene (total)		5U	5U	5U	5U	5U	5U
	Chloroform		5U	5U	5U	5U	5U	5U
	1,2-Dichloroethane		5U	5U	5U	5U	5U	5U
	2-Butanone		100U	100U	100U	100U	100U	100U
	1,1,1-Trichloroethane		5U	5U	5U	5U	5U	5U
	Carbon Tetrachloride		5U	5U	5U	5U	5U	5U
	Bromodichloromethane		5U	5U	5U	5U	5U	5U
	1,2-Dichloropropane		5U	5U	5U	5U	5U	5U
	trans-1,3-Dichloropropene		5U	5U	5U	5U	5U	5U
	Trichloroethene		5U	5U	5U	5U	5U	5U
	Dibromochloromethane		5U	5U	5U	5U	5U	5U
	1,1,2-Trichloroethane		5U	5U	5U	5U	5U	5U
	Benzene		5U	5U	5U	5U	5U	5U
	cis-1,3-Dichloropropene		5U	5U	5U	5U	5U	5U
	Bromoform		5U	5U	5U	5U	5U	5U
	4-Methyl-2-Pentanone		5U	5U	5U	5U	5U	5U
	2-Hexanone		50U	50U	50U	50U	50U	50U
	Tetrachloroethene		50U	50U	50U	50U	50U	50U
	1,1,2,2-Tetrachloroethane		5U	5U	5U	5U	5U	5U
	Toluene		5U	5U	5U	5U	5U	5U
	Chlorobenzene		5U	5U	5U	5U	5U	5U
	Ethylbenzene		5U	5U	5U	5U	5U	5U
	Styrene		5U	5U	5U	5U	5U	5U
	Xylenes (total)		5U	5U	5U	5U	5U	5U

ODS – Old Drum Storage Area of Concern (AOC).  
NWD – Northwest Ditch AOC.  
BH – Borehole.  
INT – Interval.  
U – Compound analyzed for but not detected. Number indicates detection limit.



# Appendix E

## Summary of Volatile Organic Compounds Detected in Soil/Water Samples 223rd CBCSQ, Hot Springs ANG, Hot Springs, Arkansas

(Results in micrograms per kilogram unless otherwise noted.)

Volatile Organics	Location No.: Sample Date: Lab Sample No.:		NWD-004BH INT 1 2/25/94 9402010561		CTS-004 SF 2/25/94 9402010562		NWD-006 SD 2/25/94 9402010563		NWD-005 SW 2/25/94 9402010564	
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Water	Water	Water
Chloromethane		10U		10U		10U		10U		10U
Bromomethane		10U		10U		10U		10U		10U
Vinyl Chloride		10U		10U		10U		10U		10U
Chloroethane		10U		10U		10U		10U		10U
Methylene Chloride		19.33		5U		5U		18.14		224.39
Acetone		100U		100U		100U		100U		100U
Carbon Disulfide		5U		5U		5U		5U		5U
1,1-Dichloroethene		5U		5U		5U		5U		5U
1,1-Dichloroethane		5U		5U		5U		5U		5U
1,2-Dichloroethene (total)		5U		5U		5U		5U		5U
Chloroform		5U		5U		5U		5U		12.75
1,2-Dichloroethane		5U		5U		5U		5U		5U
2-Butanone		100U		100U		100U		100U		100U
1,1,1-Trichloroethane		5U		5U		5U		5U		5U
Carbon Tetrachloride		5U		5U		5U		5U		5U
Bromodichloromethane		5U		5U		5U		5U		5U
1,2-Dichloropropane		5U		5U		5U		5U		5U
trans-1,3-Dichloropropene		5U		5U		5U		5U		5U
Trichloroethene		5U		5U		5U		5U		8.49
Dibromochloromethane		5U		5U		5U		5U		5U
1,1,2-Trichloroethane		5U		5U		5U		5U		5U
Benzene		5U		5U		5U		5U		5U
cis-1,3-Dichloropropene		5U		5U		5U		5U		5U
Bromoform		5U		5U		5U		5U		5U
4-Methyl-2-Pentanone		5U		5U		5U		5U		5U
2-Hexanone		50U		50U		50U		50U		50U
Tetrachloroethene		50U		50U		50U		50U		50U
1,1,2,2-Tetrachloroethane		5U		5U		5U		5U		5U
Toluene		5U		5U		5U		5U		5.26
Chlorobenzene		5U		5U		5U		5U		5U
Ethylbenzene		5U		5U		5U		5U		5U
Styrene		5U		5U		5U		5U		5U
Xylenes (total)		5U		5U		5U		5U		5U

NWD -- Northwest Ditch Area of Concern (AOC).  
CTS -- Current Temporary Waste Storage AOC.  
BH -- Borehole.  
INT -- Interval.  
SF -- Surface soil.

SD -- Sediment.  
SW -- Surface Water.  
U -- Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Metal/TPH Analytes Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**

(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		NEF-005, INT 1 2/24/94 9402010531	NEF-005, INT 2 2/24/94 9402010532	CTS-003, INT 1 2/24/94 9402010533	CTS-003, INT 2 2/24/94 9402010534	CTS-002, INT 1 2/24/94 9402010535
Metals	Matrix	Soil	Soil	Soil	Soil	Soil
Antimony		9.90	13.15	3U	3U	10.26
Arsenic		12.40	10.44	5.32	2.93	5.63
Beryllium		0.34U	0.44	0.44	0.33	0.50
Cadmium		1.13	1.40	1.53	1.55	0.90
Chromium		17.68	27.73	6.94	9.53	14.83
Copper		19.07	15.19	21.85	5.82	15.41
Lead		24.59	17.04	11.38	17.29	17.67
Mercury		0.15	0.10	0.12	0.11	0.09
Nickel		7.94	5.75	6.22	6.46	18.02
Selenium		12.31	16.14	0.20U	6.82	9.44
Silver		0.70U	0.71	0.70U	0.70U	0.70U
Thallium		10U	10U	10U	10U	10U
Zinc		29.31	22.50	22.92	25.76	16.75

Lab Sample ID No.:		9402010531	9402010532	9402010533	9402010534	9402010535
Total Petroleum Hydrocarbons (TPH)		10U	10U	21.25	11.62	10U

NEF – Northeast and East Fence Line Area of Concern (AOC).

CTS – Current Temporary Waste Storage AOC.

INT – Interval.

U – Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Metal/TPH Analytes Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		CTS-002, INT 2 2/24/94 9402010536		CTS-001, INT 1 2/24/94 9402010537		NEF-004 INT 1 2/24/94 9402010538		NEF-003, INT 1 2/24/94 9402010539		NEF-003, INT 2 2/24/94 9402010540	
Metals	Matrix	Soil		Soil		Soil		Soil		Soil	
Antimony		12.34		3U		10.26		10.64		16.37	
Arsenic		8.40		10.21		10.92		4.48		16.16	
Beryllium		0.86		0.26		0.51		0.34		0.34	
Cadmium		0.68		0.57		0.50U		0.50U		0.50U	
Chromium		16.31		8.61		14.28		11.19		11.60	
Copper		23.48		9.19		14.51		6.14		5.37	
Lead		26.93		15.87		45.31		22.06		25.57	
Mercury		0.11		0.11		0.13		0.15		0.12	
Nickel		23.46		7.86		13.47		6.37		7.06	
Selenium		0.73		0.26		0.20U		1.53		1.21	
Silver		0.70U		0.70U		0.70U		0.70U		0.70U	
Thallium		10U		10U		10U		10U		10U	
Zinc		74.55		27.27		75.33		25.38		26.92	

Lab Sample ID No.:		9402010536		9402010537		9402010538		9402010539		9402010540	
Total Petroleum Hydrocarbons (TPH)		10U		10U		10U		10U		10U	

CTS – Current Temporary Waste Storage Area of Concern (AOC).  
NEF – Northeast and East Fence Line AOC.

INT – Interval.  
U – Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Metal/TPH Analytes Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	NEF-002, INT 1 2/24/94 9402010541		NEF-002, INT 2 2/24/94 9402010542		NEF-001, INT 1 2/24/94 9402010543		NEF-001, INT 2 2/24/94 9402010544		ODS-004, INT 1 2/25/94 9401020551	
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Metals										
Antimony		11.47	6.05		3U		6.01		3.68	
Arsenic		13.34	14.72		6.99		12.13		6.66	
Beryllium		0.58	0.77		0.22		0.37		0.50	
Cadmium		1.15	0.56		0.53		0.62		0.75	
Chromium		22.63	22.08		5U		23.71		12.95	
Copper		26.80	20.37		10.47		5.44		10.07	
Lead		59.83	23.00		27.62		22.81		21.03	
Mercury		0.07	0.19		0.12		0.16		0.05	
Nickel		14.87	24.21		3.36		8.62		13.70	
Selenium		2.63	3.56		5.20		2.20		0.20U	
Silver		0.70U	0.73		0.70U		0.70U		0.70U	
Thallium		10U	10U		10U		10U		10U	
Zinc		161.33	99.57		38.58		43.04		39.75	

Lab Sample ID No.:		9402010541		9402010542		9402010543		9402010544		9401020551	
Total Petroleum Hydrocarbons (TPH)		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U

NEF – Northeast and East Fence Line Area of Concern (AOC).  
ODS – Old Drum Storage AOC.

INT – Interval.

U – Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Metal/TPH Analytes Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		ODS-002, INT 1 2/25/94 9402010552		ODS-001, INT 1 2/25/94 9402010553		ODS-001, INT 2 2/25/94 9402010554		ODS-003, INT 1 2/25/94 9402010555		NWD-001, INT 1 2/25/94 9402010556	
Metals	Matrix	Soil		Soil		Soil		Soil		Soil	
Antimony		3U		3U		3U		3U		5.31	
Arsenic		10.17		3.07		6.23		8.10		10.44	
Beryllium		0.26		0.24		0.51		0.96		0.50	
Cadmium		0.72		0.95		0.50U		1.00		0.50U	
Chromium		8.88		5U		11.83		10.08		10.93	
Copper		6.26		26.19		11.76		10.88		10.40	
Lead		11.00		28.55		37.70		42.35		32.09	
Mercury		0.08		0.06		0.06		0.04		0.06	
Nickel		4.07		3.69		8.86		8.81		12.06	
Selenium		0.20U		0.20U		0.20U		0.20U		0.20U	
Silver		0.70U		0.70U		0.70U		0.70U		0.70U	
Thallium		10U		10U		10U		10U		10U	
Zinc		10.40		143.81		38.84		156.77		87.46	

Lab Sample ID No.:		9402010552		9402010553		9402010554		9402010555		9402010556	
Total Petroleum Hydrocarbons (TPH)		10U		10U		10U		10U		10U	

ODS – Old Drum Storage Area of Concern (AOC).  
NWD – Northwest Ditch AOC.

INT – Interval.

U – Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Metal/TPH Analytes Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		NWD-002, INT 1 2/25/94 9402010557		NWD-002, INT 2 2/25/94 9402010558		NWD-003, INT 1 2/25/94 9402010559		NWD-003, INT 2 2/25/94 9402010560		NWD-004, INT 1 2/25/94 9402010561	
Metals	Matrix	Soil		Soil		Soil		Soil		Soil	
Antimony		3U		3U		3U		3U		3U	
Arsenic		6.94		12.22		12.44		10.54		13.48	
Beryllium		0.36		0.58		0.36		0.35		0.91	
Cadmium		0.50U		0.50U		0.50U		0.50U		0.50U	
Chromium		8.72		14.87		11.54		10.51		5.75	
Copper		6.34		23.53		9.01		5.41		10.24	
Lead		20.23		31.28		29.98		12.00		12.08	
Mercury		0.03		0.09		0.04		0.04		0.22	
Nickel		8.15		9.68		8.48		8.71		4.80	
Selenium		0.20U		0.20U		0.70		0.47		0.98	
Silver		0.70U		0.70U		0.70U		0.70U		0.70U	
Thallium		10U		10U		10U		10U		10U	
Zinc		30.44		38.64		36.41		25.77		16.89	

Lab Sample ID No.:		9402010557		9402010558		9402010559		9402010560		9402010561	
Total Petroleum Hydrocarbons (TPH)		10U		10U		10U		10U		10U	

NWD - Northwest Ditch Area of Concern (AOC).  
INT - Interval.

U - Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Metal/TPH Analytes Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
 (Results in milligrams per kilogram for soil or milligrams per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		CTS-004 SF 2/25/94 9402010562		NWD-006 SD 2/25/94 9402010563		NWD-005 SW 2/25/94 9402010572	
Metals	Matrix	Soil		Soil		Water	
Antimony		3U		3U		0.03U	
Arsenic		9.72		9.77		0.002	
Beryllium		0.33		0.40		0.007	
Cadmium		5.18		6.04		0.03	
Chromium		20.69		67.08		0.09	
Copper		40.46		24.42		0.02	
Lead		54.89		476.70		0.12	
Mercury		0.06		0.09		0.006	
Nickel		10.20		11.32		0.02U	
Selenium		0.20U		0.2U		0.002U	
Silver		0.70U		0.70U		0.02	
Thallium		10U		10U		0.11	
Zinc		601.59		416.40		0.11	

Lab Sample ID No.:		9402010562		9402010563		9402010572	
Total Petroleum Hydrocarbons (TPH)		10U		10U		1,300 ppb	

CTS - Current Temporary Waste Storage Area of Concern (AOC).  
 NWD - Northwest Ditch AOC.  
 SF - Surface soil.  
 SD - Sediment.  
 SW - Surface Water.  
 U - Compound analyzed for but not detected. Number indicates detection limit.  
 ppb - parts per billion.



## Appendix E

# Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples 223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		NEF-005, INT 1 2/24/94 9402010531		NEF-005, INT 2 2/24/94 9402010532		CTS-003, INT 1 2/24/94 9402010533		CTS-003, INT 2 2/24/94 94020100534		CTS-002, INT 1 2/24/94 9402010535	
Semivolatile Organics	Matrix	Soil		Soil		Soil		Soil		Soil	
Phenol		660U		660U		660U		660U		660U	
bis(2-Chloroethyl)Ether		660U		660U		660U		660U		660U	
2-Chlorophenol		660U		660U		660U		660U		660U	
1,3-Dichlorobenzene		660U		660U		660U		660U		660U	
1,4-Dichlorobenzene		660U		660U		660U		660U		660U	
Benzyl Alcohol		1,300U		1,300U		1,300U		1,300U		1,300U	
1,2-Dichlorobenzene		660U		660U		660U		660U		660U	
2-Methylphenol		660U		660U		660U		660U		660U	
bis(2-Chloroisopropyl)Ether		660U		660U		660U		660U		660U	
4-Methylphenol		660U		660U		660U		660U		660U	
N-Nitroso-Di-n-Propylamine		660U		660U		660U		660U		660U	
Hexachloroethane		660U		660U		660U		660U		660U	
Nitrobenzene		660U		660U		660U		660U		660U	
Isophorone		660U		660U		660U		660U		660U	
2-Nitrophenol		660U		660U		660U		660U		660U	
2,4-Dimethylphenol		660U		660U		660U		660U		660U	
Benzoic Acid		3,300U		3,300U		3,300U		3,300U		3,300U	
bis(2-Chloroethoxy)Methane		660U		660U		660U		660U		660U	
2,4-Dichlorophenol		660U		660U		660U		660U		660U	
1,2,4-Trichlorobenzene		660U		660U		660U		660U		660U	
Naphthalene		660U		660U		660U		660U		660U	
4-Chloroaniline		1,300U		1,300U		1,300U		1,300U		1,300U	
Hexachlorobutadiene		660U		660U		660U		660U		660U	
4-Chloro-3-Methylphenol		1,300U		1,300U		1,300U		1,300U		1,300U	
2-Methylnaphthalene		660U		660U		660U		660U		660U	
Hexachlorocyclopentadiene		660U		660U		660U		660U		660U	
2,4,6-Trichlorophenol		660U		660U		660U		660U		660U	
2,4,5-Trichlorophenol		660U		660U		660U		660U		660U	
2-Chloronaphthalene		660U		660U		660U		660U		660U	
2-Nitroaniline		3,300U		3,300U		3,300U		3,300U		3,300U	



**Appendix E (Concluded)**  
**Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
 (Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Semivolatile Organics	Location No.: Sample Date: Lab Sample No.:		NEF-005, INT 1 2/24/94 9402010531		NEF-005, INT 2 2/24/94 9402010532		CTS-003, INT 1 2/24/94 9402010533		CTS-003, INT 2 2/24/94 9402010534		CTS-002, INT 1 2/24/94 9402010535	
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Dimethylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Acenaphthylene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,6-Dinitrotoluene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
3-Nitroaniline		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,4-Dinitrophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,4-Dinitrotoluene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Diethylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Fluorene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Nitroaniline		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Hexachlorobenzene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Pentachlorophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Anthracene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Di-n-Butylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Butylbenzylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(a)Anthracene		1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U
Chrysene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Di-n-Octyl Phthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(a)Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U

NEF - Northeast and East Fence Line Area of Concern (AOC).  
 CTS - Current Temporary Waste Storage AOC.

INT - Interval.  
 U - Compound analyzed for but not detected. Number indicates detection limit.



# Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples 223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas

Location No.: Sample Date: Lab Sample No.:	CTS-002, INT 2		CTS-001, INT 1		NEF-004, INT 1		NEF-003, INT 1		NEF-003, INT 2	
Matrix	Soil		Soil		Soil		Soil		Soil	
Semivolatile Organics										
Phenol	660U		660U		660U		660U		660U	
bis(2-Chloroethyl)Ether	660U		660U		660U		660U		660U	
2-Chlorophenol	660U		660U		660U		660U		660U	
1,3-Dichlorobenzene	660U		660U		660U		660U		660U	
1,4-Dichlorobenzene	660U		660U		660U		660U		660U	
Benzyl Alcohol	1,300U		1,300U		1,300U		1,300U		1,300U	
1,2-Dichlorobenzene	660U		660U		660U		660U		660U	
2-Methylphenol	660U		660U		660U		660U		660U	
bis(2-Chloroisopropyl)Ether	660U		660U		660U		660U		660U	
4-Methylphenol	660U		660U		660U		660U		660U	
N-Nitroso-Di-n-Propylamine	660U		660U		660U		660U		660U	
Hexachloroethane	660U		660U		660U		660U		660U	
Nitrobenzene	660U		660U		660U		660U		660U	
Isophorone	660U		660U		660U		660U		660U	
2-Nitrophenol	660U		660U		660U		660U		660U	
2,4-Dimethylphenol	660U		660U		660U		660U		660U	
Benzoic Acid	3,300U		3,300U		3,300U		3,300U		3,300U	
bis(2-Chloroethoxy)Methane	660U		660U		660U		660U		660U	
2,4-Dichlorophenol	660U		660U		660U		660U		660U	
1,2,4-Trichlorobenzene	660U		660U		660U		660U		660U	
Naphthalene	660U		660U		660U		660U		660U	
4-Chloroaniline	1,300U		1,300U		1,300U		1,300U		1,300U	
Hexachlorobutadiene	660U		660U		660U		660U		660U	
4-Chloro-3-Methylphenol	1,300U		1,300U							



# Appendix E (Concluded)

## Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples 223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	CTS-002, INT 2 2/24/94 9402010536	CTS-001, INT 1 2/24/94 9402010537	NEF-004, INT 1 2/24/94 9402010538	NEF-003, INT 1 2/24/94 9402010539	NEF-003, INT 2 2/24/94 9402010540
Semivolatile Organics	Matrix	Soil	Soil	Soil	Soil
Dimethylphthalate	660U	660U	660U	660U	660U
Acenaphthylene	660U	660U	660U	660U	660U
2,6-Dinitrotoluene	660U	660U	660U	660U	660U
3-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene	660U	660U	660U	660U	660U
2,4-Dinitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran	660U	660U	660U	660U	660U
2,4-Dinitrotoluene	660U	660U	660U	660U	660U
Diethylphthalate	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether	660U	660U	660U	660U	660U
Fluorene	660U	660U	660U	660U	660U
4-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether	660U	660U	660U	660U	660U
Hexachlorobenzene	660U	660U	660U	660U	660U
Pentachlorophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene	660U	660U	660U	660U	660U
Anthracene	660U	660U	660U	660U	660U
Di-n-Buylphthalate	660U	660U	660U	660U	660U
Fluoranthene	660U	660U	660U	660U	660U
Pyrene	660U	660U	660U	660U	660U
Buylbenzylphthalate	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene	660U	660U	660U	660U	660U
Chrysene	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate	660U	660U	660U	660U	660U
Di-n-Octyl Phthalate	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene	660U	660U	660U	660U	660U
Benzo(a)Pyrene	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene	660U	660U	660U	660U	660U

CTS - Current Temporary Waste Storage Area of Concern (AOC).  
NEF - Northeast and East Fence Line AOC.

INT - Interval.

U - Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:		NEF-002, INT 1 2/24/94 9402010541	NEF-002, INT 2 2/24/94 9402010542	NEF-001, INT 1 2/24/94 9402010543	NEF-001, INT 2 2/24/94 9402010544	ODS-004, INT 1 2/25/94 9402010551
Semivolatile Organics	Matrix	Soil	Soil	Soil	Soil	Soil
Phenol		660U	660U	660U	660U	660U
bis(2-Chloroethyl)Ether		660U	660U	660U	660U	660U
2-Chlorophenol		660U	660U	660U	660U	660U
1,3-Dichlorobenzene		660U	660U	660U	660U	660U
1,4-Dichlorobenzene		660U	660U	660U	660U	660U
Benzyl Alcohol		1,300U	1,300U	1,300U	1,300U	1,300U
1,2-Dichlorobenzene		660U	660U	660U	660U	660U
2-Methylphenol		660U	660U	660U	660U	660U
bis(2-Chloroisopropyl)Ether		660U	660U	660U	660U	660U
4-Methylphenol		660U	660U	660U	660U	660U
N-Nitroso-Di-n-Propylamine		660U	660U	660U	660U	660U
Hexachloroethane		660U	660U	660U	660U	660U
Nitrobenzene		660U	660U	660U	660U	660U
Isophorone		660U	660U	660U	660U	660U
2-Nitrophenol		660U	660U	660U	660U	660U
2,4-Dimethylphenol		660U	660U	660U	660U	660U
Benzoic Acid		3,300U	3,300U	3,300U	3,300U	3,300U
bis(2-Chloroethoxy)Methane		660U	660U	660U	660U	660U
2,4-Dichlorophenol		660U	660U	660U	660U	660U
1,2,4-Trichlorobenzene		660U	660U	660U	660U	660U
Naphthalene		660U	660U	660U	660U	660U
4-Chloroaniline		1,300U	1,300U	1,300U	1,300U	1,300U
Hexachlorobutadiene		660U	660U	660U	660U	660U
4-Chloro-3-Methylphenol		1,300U	1,300U	1,300U	1,300U	1,300U
2-Methylnaphthalene		660U	660U	660U	660U	660U
Hexachlorocyclopentadiene		660U	660U	660U	660U	660U
2,4,6-Trichlorophenol		660U	660U	660U	660U	660U
2,4,5-Trichlorophenol		660U	660U	660U	660U	660U
2-Chloronaphthalene		660U	660U	660U	660U	660U
2-Nitroaniline		3,300U	3,300U	3,300U	3,300U	3,300U



# Appendix E (Concluded)

## Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples 223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Semivolatile Organics	Location No.: Sample Date: Lab Sample No.:		NEF-002, INT 1 2/24/94 9402010541		NEF-002, INT 2 2/24/94 9402010542		NEF-001, INT 1 2/24/94 9402010543		NEF-001, INT 2 2/24/94 9402010544		ODS-004, INT 1 2/25/94 9402010551	
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Dimethylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Acenaphthylene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,6-Dinitrotoluene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
3-Nitroaniline		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,4-Dinitrophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,4-Dinitrotoluene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Diethylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Fluorene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Nitroaniline		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Hexachlorobenzene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Pentachlorophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Anthracene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Di-n-Butylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Butylbenzylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(a)Anthracene		1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U
Chrysene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Di-n-Octyl Phthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(a)Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U	660U

NEF - Northeast and East Fence Line Area of Concern (AOC).

ODS - Old Drum Storage AOC.

INT - Interval.

U - Compound analyzed for but not detected. Number indicates detection limit.



(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

NWD-001, INT 1  
2/25/94  
9402010556



# Appendix E (Concluded)

## Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples 223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas

(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Location No.: Sample Date: Lab Sample No.:	ODS-002, INT 1 2/25/94 9402010552	ODS-001, INT 1 2/25/94 9402010553	ODS-001, INT 2 2/25/94 9402010554	ODS-003, INT 1 2/25/94 9402010555	NWD-001, INT 1 2/25/94 9402010556
Semivolatile Organics	Matrix	Soil	Soil	Soil	Soil
Dimethylphthalate	660U	660U	660U	660U	660U
Acenaphthylene	660U	660U	660U	660U	660U
2,6-Dinitrotoluene	660U	660U	660U	660U	660U
3-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene	660U	660U	660U	660U	660U
2,4-Dinitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran	660U	660U	660U	660U	660U
2,4-Dinitrotoluene	660U	660U	660U	660U	660U
Diethylphthalate	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether	660U	660U	660U	660U	660U
Fluorene	660U	660U	660U	660U	660U
4-Nitroaniline	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether	660U	660U	660U	660U	660U
Hexachlorobenzene	660U	660U	660U	660U	660U
Pentachlorophenol	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene	660U	2,229.82	660U	4,649.25	660U
Anthracene	660U	660U	660U	1,070.88	660U
Di-n-Butylphthalate	660U	660U	660U	660U	660U
Fluoranthene	660U	4,029.46	660U	7,725.69	660U
Pyrene	660U	6,411.72	660U	11,182.02	1,055.08
Butylbenzylphthalate	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene	660U	1,735.02	660U	3,223.47	660U
Chrysene	660U	2,711.77	660U	5,126.32	660U
bis(2-Ethylhexyl)Phthalate	660U	1,266.64	660U	660U	660U
Di-n-Octyl Phthalate	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene	660U	1,266.28	660U	1,982.48	660U
Benzo(k)Fluoranthene	660U	1,084.57	660U	1,621.02	660U
Benzo(a)Pyrene	660U	1,094.21	660U	1,754.39	660U
Indeno(1,2,3-cd)Pyrene	660U	797.54	660U	1,010.57	660U
Dibenzo(a,h)Anthracene	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene	660U	1,037.09	660U	1,381.32	660U

ODS - Old Drum Storage Area of Concern (AOC).  
NWD - Northwest Ditch AOC.

INT - Interval.

U - Compound analyzed for but not detected. Number indicates detection limit.



# Appendix E

## Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples 223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas

Location No.: Sample Date: Lab Sample No.:	NWD-002, INT 1 2/25/94 9402010557	NWD-002, INT 2 2/25/94 9402010558	NWD-003, INT 1 2/25/94 9402010559	NWD-003, INT 2 2/25/94 9402010560	NWD-004, INT 1 2/25/94 9402010561
Semivolatile Organics	Matrix	Soil	Soil	Soil	Soil
Phenol		660U	660U	660U	660U
bis(2-Chloroethyl)Ether		660U	660U	660U	660U
2-Chlorophenol		660U	660U	660U	660U
1,3-Dichlorobenzene		660U	660U	660U	660U
1,4-Dichlorobenzene		660U	660U	660U	660U
Benzyl Alcohol		1,300U	1,300U	1,300U	1,300U
1,2-Dichlorobenzene		660U	660U	660U	660U
2-Methylphenol		660U	660U	660U	660U
bis(2-Chloroisopropyl)Ether		660U	660U	660U	660U
4-Methylphenol		660U	660U	660U	660U
N-Nitroso-Di-n-Propylamine		660U	660U	660U	660U
Hexachloroethane		660U	660U	660U	660U
Nitrobenzene		660U	660U	660U	660U
Isophorone		660U	660U	660U	660U
2-Nitrophenol		660U	660U	660U	660U
2,4-Dimethylphenol		660U	660U	660U	660U
Benzoic Acid		3,300U	3,300U	3,300U	3,300U
bis(2-Chloroethoxy)Methane		660U	660U	660U	660U
2,4-Dichlorophenol		660U	660U	660U	660U
1,2,4-Trichlorobenzene		660U	660U	660U	660U
Naphthalene		660U	660U	660U	660U
4-Chloroaniline		1,300U	1,300U	1,300U	1,300U
Hexachlorobutadiene		660U	660U	660U	660U
4-Chloro-3-Methylphenol		1,300U	1,300U	1,300U	1,300U
2-Methylnaphthalene		660U	660U	660U	660U
Hexachlorocyclopentadiene		660U	660U	660U	660U
2,4,6-Trichlorophenol		660U	660U	660U	660U
2,4,5-Trichlorophenol		660U	660U	660U	660U
2-Chloronaphthalene		660U	660U	660U	660U
2-Nitroaniline		3,300U	3,300U	3,300U	3,300U



**Appendix E (Concluded)**  
**Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Semivolatile Organics	Matrix	NWD-002, INT 1 2/25/94 9402010557		NWD-002, INT 2 2/25/94 9402010558		NWD-003, INT 1 2/25/94 9402010559		NWD-003, INT 2 2/25/94 9402010560		NWD-004, INT 1 2/25/94 9402010561	
		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Dimethylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Acenaphthylene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,6-Dinitrotoluene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
3-Nitroaniline		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Acenaphthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,4-Dinitrophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
4-Nitrophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Dibenzofuran		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
2,4-Dinitrotoluene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Diethylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Chlorophenyl-phenylether		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Fluorene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Nitroaniline		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
4,6-Dinitro-2-Methylphenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
N-Nitrosodiphenylamine		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
4-Bromophenyl-phenylether		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Hexachlorobenzene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Pentachlorophenol		3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U	3,300U
Phenanthrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Anthracene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Di-n-Butylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Pyrene		966.66	966.66	966.66	966.66	966.66	966.66	966.66	966.66	966.66	966.66
Butylbenzylphthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
3,3'-Dichlorobenzidine		1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U	1,300U
Benzo(a)Anthracene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Chrysene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
bis(2-Ethylhexyl)Phthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Di-n-Octyl Phthalate		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(b)Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(k)Fluoranthene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(a)Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Indeno(1,2,3-cd)Pyrene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Dibenzo(a,h)Anthracene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U
Benzo(g,h,i)Perylene		660U	660U	660U	660U	660U	660U	660U	660U	660U	660U

NWD - Northwest Ditch Area of Concern (AOC).  
INT - Interval.  
U - Compound analyzed for but not detected. Number indicates detection limit.



**Appendix E**  
**Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
 (Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Semivolatile Organics	Location No.: Sample Date: Lab Sample No.:	CTS-004 SF 2/25/94 9402010562	NWD-006 SD 2/25/94 9402010563	NWD-005 SW 2/25/94 9402010572
	Matrix	Soil	Soil	Water
Phenol		660U	660U	10U
bis(2-Chloroethyl)Ether		660U	660U	10U
2-Chlorophenol		660U	660U	10U
1,3-Dichlorobenzene		660U	660U	10U
1,4-Dichlorobenzene		660U	660U	10U
Benzyl Alcohol		1,300U	660U	20U
1,2-Dichlorobenzene		660U	660U	10U
2-Methylphenol		660U	660U	10U
bis(2-Chloroisopropyl)Ether		660U	660U	10U
4-Methylphenol		660U	660U	10U
N-Nitroso-Di-n-Propylamine		660U	660U	10U
Hexachloroethane		660U	660U	10U
Nitrobenzene		660U	660U	10U
Isophorone		660U	660U	10U
2-Nitrophenol		660U	660U	10U
2,4-Dimethylphenol		660U	660U	10U
Benzoic Acid		3,300U	3,300U	50U
bis(2-Chloroethoxy)Methane		660U	660U	10U
2,4-Dichlorophenol		660U	660U	10U
1,2,4-Trichlorobenzene		660U	660U	10U
Naphthalene		2,681.25	660U	10U
4-Chloroaniline		1,300U	1,300U	20U
Hexachlorobutadiene		660U	660U	10U
4-Chloro-3-Methylphenol		1,300U	1,300U	20U
2-Methylnaphthalene		1,034.18	660U	10U
Hexachlorocyclopentadiene		660U	660U	10U
2,4,6-Trichlorophenol		660U	660U	10U
2,4,5-Trichlorophenol		660U	660U	10U
2-Chloronaphthalene		660U	660U	10U
2-Nitroaniline		3,300U	3,300U	50U



**Appendix E (Concluded)**  
**Summary of Semivolatile Organic Compounds Detected in Soil/Water Samples**  
**223rd CBCS, Hot Springs ANG, Hot Springs, Arkansas**  
(Results in micrograms per kilogram for soil or micrograms per liter for water unless otherwise noted.)

Semivolatile Organics	Location No.: Sample Date: Lab Sample No.:	CTS-004 SF 2/25/94 9402010562	NWD-006 SD 2/25/94 9402010563	NWD-005 SW 2/25/94 9402010572
	Matrix	Soil	Soil	Water
Dimethylphthalate		660U	660U	10U
Acenaphthylene		660U	660U	10U
2,6-Dinitrotoluene		660U	660U	10U
3-Nitroaniline		3,300U	3,300U	50U
Acenaphthene		5,651.72	2,024.26	10U
2,4-Dinitrophenol		3,300U	3,300U	50U
4-Nitrophenol		3,300U	3,300U	50U
Dibenzofuran		2,362.84	1,441.40	10U
2,4-Dinitrotoluene		660U	660U	10U
Diethylphthalate		660U	660U	10U
4-Chlorophenyl-phenylether		660U	660U	10U
Fluorene		5,459.81	2,686.78	10U
4-Nitroaniline		3,300U	3,300U	50U
4,6-Dinitro-2-Methylphenol		3,300U	3,300U	50U
N-Nitrosodiphenylamine		660U	660U	10U
4-Bromophenyl-phenylether		660U	660U	10U
Hexachlorobenzene		660U	660U	10U
Pentachlorophenol		3,300U	3,300U	50U
Phenanthrene		65,689.27	50,467.88	10U
Anthracene		20,106.44	50,122.49	10U
Di-n-Butylphthalate		660U	660U	10U
Fluoranthene		75,269.06	59,393.35	10U
Pyrene		114,371.61	84,561.55	10U
Butylbenzylphthalate		660U	660U	10U
3,3'-Dichlorobenzidine		1,300U	1,300U	20U
Benzo(a)Anthracene		26,676.08	18,938.94	10U
Chrysene		37,808.93	29,882.09	10U
bis(2-Ethylhexyl)Phthalate		2,308.51	2,916.73	1,553.96
Di-n-Octyl Phthalate		660U	660U	10U
Benzo(b)Fluoranthene		15,830.59	14,886.15	10U
Benzo(k)Fluoranthene		11,433.92	11,080.74	10U
Benzo(a)Pyrene		14,026.74	13,424.02	10U
Indeno(1,2,3-cd)Pyrene		7,684.55	9,180.39	10U
Dibenzo(a,h)Anthracene		660U	660U	10U
Benzo(g,h,i)Perylene		9,523.44	11,321.52	10U

CTS - Current Temporary Waste Storage Area of Concern (AOC).  
NWD - Northwest Ditch AOC.  
SF - Surface soil.  
SD - Sediment.  
SW - Surface Water.  
U - Compound analyzed for but not detected. Number indicates detection limit.





# Environmental Services Company, Inc.

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MEMPHIS, TN 38134  
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LABORATORY ANALYSES  
HOT SPRINGS, ARKANSAS ANG'S  
OPERATIONAL TECHNOLOGIES  
CORPORATION

MARCH 15, 1994 REPORT REVISIONS  
MARCH 17, 1994

PREPARED BY:

Environmental Services Company, Inc.  
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Little Rock, Arkansas 72211  
501-221-2565

REPLACEMENT COPY



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Memphis, TN 38134

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Phone: (501) 750-1170 Fax: 740-1172

Phone: (941) 372-9332 Fax: 372-9334

Date of Report: 02/11/94

Type of Sample: BUIL

Control Number: 9402910031

Customer Name: CHEMICAL TECHNOLOGIES

Sample Collected From: NEF-QMS, INT 1

Sample Date: 02/24/94

Sample Collected By: EARL PARKER

Work Order No.: 5/19

Time Of Sample: 0940

Delivered To Lab By: PES EX

Purchase Order:

Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Method	Edition
03/09	1700	LAC	Antimony	9.69500		MG/KG	7041		SW-046
03/12	1600	LAC	Silver	< 0.70000		MG/KG	7760		SW-046
03/09	0930	LAC	Chromium	17.6770		MG/KG	7190		SW-046
03/10	1200	LAC	Selenium	12.30500		MG/KG	7740		SW-046
03/03	1530	LAC	Copper	19.0710		MG/KG	7210		SW-046
03/03	0600	LAC	Zinc	29.3120		MG/KG	7950		SW-046
03/04	1400	LAC	Nickel	7.9370		MG/KG	7530		SW-046
03/09	1015	LAC	Beryllium	0.3350		MG/KG	7050		SW-046
03/09	0900	LAC	Thallium	< 10.00000		MG/KG	7040		SW-046
03/11	1130	LAC	Lead	24.5910		MG/KG	7430		SW-046
03/09	1430	LAC	Cadmium	1.1340		MG/KG	7130		SW-046
03/11	1030	LAC	Arsenic	12.3950		MG/KG	7040		SW-046
03/12	1530	LAC	Mercury T	0.1514		MG/KG	7471		SW-046

Quality Assurance

Duplicates	% Spike
1.0030	1.0350
21.8340	22.4550
30.8730	32.0950
35.4060	33.1260
28.3410	29.3240
2.1050	2.1120
1.3400	1.3940
21.9650	22.5650
25.6930	27.6550
35.0920	37.1060
1.1400	1.1670
30.2310	29.1400
15.1100	14.9500

No data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with 049495.

Signature:  Environmental Services Co., Inc.

Signature:  Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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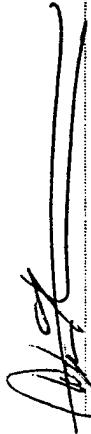
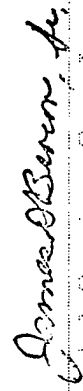
Phone: (501) 750-1170 Fax: 750-1172 Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94  
Customer Name: OPERATIONAL TECHNOLOGIES  
Sample Date: 02/24/94  
Type of Sample: 1015  
Type of Sample: SOIL  
Sample Collected From: NEF-005, INT 2  
Sample Collected By: EARL PARKER  
Delivered To Lab By: FED EX  
Control Number: 9402010532  
Work Order No.: 5719  
Purchase Order:

ANALYSIS				QUALITY ASSURANCE			
Date	Time	By	Parameter	Concentration	Units	Quantity	Method
02/25	1200	LAC	Antimony	13.1460	MG/KG	7041	504-046
02/27	1600	LAC	Silver	0.7060	MG/KG	7150	504-046
02/27	0900	LAC	Chromium	27.7270	MG/KG	7150	504-046
02/27	1500	LAC	Cadmium	16.1350	MG/KG	7740	504-046
02/27	1500	LAC	Copper	15.1550	MG/KG	7210	504-046
02/27	1500	LAC	Zinc	22.5000	MG/KG	7570	504-046
02/27	1500	LAC	Nickel	5.7500	MG/KG	7520	504-046
03/09	1015	LAC	Beryllium	0.4330	MG/KG	7050	504-046
03/09	0900	LAC	Thallium	< 10.0000	MG/KG	7040	504-046
03/11	1130	LAC	Lead	17.0420	MG/KG	7420	504-046
03/23	1430	LAC	Cadmium	1.3960	MG/KG	7130	504-046
03/11	1530	LAC	Arsenic	10.4330	MG/KG	7060	504-046
03/12	1330	LAC	Mercury T	0.0999	MG/KG	7471	504-046
				Edition			
				or Ref.			
				Method	Quantity	Recovery	Spike
				1.0000	1.0000	98.2 %	
				21.6300	22.4350	96.9 %	
				30.6700	32.0750	95.0 %	
				35.4000	35.1250	129.2 %	
				33.3400	27.3200	97.6 %	
				2.1050	2.1120	68.6 %	
				1.3400	1.3940	93.5 %	
				21.9550	22.5650	98.8 %	
				25.5950	27.5500	88.1 %	
				36.0720	37.1050	70.2 %	
				1.1450	1.1620	106.0 %	
				30.6550	34.1440	108.1 %	
				26.1500	26.9500	93.6 %	

All data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with EPA Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. (A) PLAN filed with APTX-E.

Signature:  Environmental Services Co., Inc.  
Signature:  Environmental Services Co., Inc.



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Date of Report: 03/15/94  
Customer Name: OPERATIONAL TECHNOLOGIES  
Sample Date: 02/24/94  
Time Of Sample: 1109

Type Of Sample : SOIL  
Sample Collected From: CTS-003, INF 1  
Sample Collected by : EAL PARKER  
Delivered To Lab By : FED EX

Control Number: 9402010533

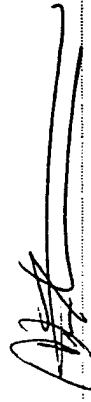
Work Order No.: 5719  
Purchase Order:

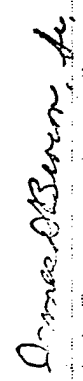
## Analysis

Date	Time	Ev.	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition	Quality Assurance	% Spike
2/20/94	1300	LAC	Antimony	<	3.02000	MG/KG	7041	30-846	7041	30-846	1.0000	98.2 %
2/21/94	1400	LAC	Silver	<	0.70000	MG/KG	7750	30-846	7750	30-846	21.5340	96.9 %
2/22/94	0700	LAC	Chromium	<	6.93300	MG/KG	7150	30-846	7150	30-846	90.8750	86.0 %
2/22/94	1300	LAC	Selenium	<	0.20000	MG/KG	7740	30-846	7740	30-846	36.4050	129.2 %
2/22/94	1530	LAC	Copper	21.8490		MG/KG	7210	30-846	7210	30-846	35.3410	99.6 %
2/23/94	0600	LAC	Zinc	22.92000		MG/KG	7550	30-846	7550	30-846	2.1050	65.6 %
2/23/94	1500	LAC	Nickel	6.2190		MG/KG	7530	30-846	7530	30-846	1.3400	98.5 %
2/23/94	1615	LAC	Beryllium	0.4410		MG/KG	7060	30-846	7060	30-846	21.9650	98.8 %
2/24/94	0640	LAC	Thallium	<	10.00000	MG/KG	7340	30-846	7340	30-846	25.8950	88.1 %
2/24/94	1100	LAC	Lead	11.3750		MG/KG	7430	30-846	7430	30-846	65.4070	70.2 %
2/26/94	1430	LAC	Cadmium	1.5340		MG/KG	7130	30-846	7130	30-846	1.1450	106.0 %
2/27/94	1630	LAC	Arsenic	5.3190		MG/KG	7040	30-846	7040	30-846	34.6550	108.1 %
2/27/94	1730	LAC	Mercury T	0.1211		MG/KG	7471	30-846	7471	30-846	26.1500	93.6 %

\* CA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. SA PLAN filed with ADEQ&E.

Signature  Environmental Services Co., Inc.

Signature  Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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Springdale, AR 72764

Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.  
Memphis, TN 38134  
Phone: (901) 372-9332 Fax: 372-9334

Control Number: 9402010534

Type Of Sample : SOIL

Sample Collected From: CTS-003, INT 2

Sample Collected By : EARL PARKER

Delivered To Lab By : PED EX

Work Order No.: 5719

Purchase Order:

Date Of Report: 03/15/94

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Date: 02/24/94

Time Of Sample: 1120

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Ref.	Edition
03/07	1200	LAC	Antimony	0.3460		MG/KG	7041		7041	SW-846	SW-846
03/12	1600	LAC	Silver	0.7000	<	MG/KG	7150		7150	SW-846	SW-846
03/07	0930	LAC	Chromium	9.5270		MG/KG	7140		7140	SW-846	SW-846
03/10	1200	LAC	Selenium	6.8240		MG/KG	7210		7210	SW-846	SW-846
03/08	1530	LAC	Copper	5.8180		MG/KG	7950		7950	SW-846	SW-846
03/08	0600	LAC	Zinc	25.7600		MG/KG	7520		7520	SW-846	SW-846
03/08	1500	LAC	Nickel	6.4550		MG/KG	7090		7090	SW-846	SW-846
03/09	1015	LAC	Beryllium	0.3270		MG/KG	7940		7940	SW-846	SW-846
03/09	0900	LAC	Thallium	10.0000	<	MG/KG	7420		7420	SW-846	SW-846
03/11	1130	LAC	Lead	17.2910		MG/KG	7130		7130	SW-846	SW-846
03/08	1430	LAC	Cadmium	1.5450		MG/KG	7060		7060	SW-846	SW-846
03/11	1630	LAC	Arsenic	2.9320		MG/KG	7060		7060	SW-846	SW-846
03/12	1330	LAC	Mercury	0.1105	T	MG/KG	7471		7471	SW-846	SW-846

## Quality Assurance

Duplicates	% Spike	Recovery
1.0030	1.0350	98.2 %
21.8340	22.4550	96.9 %
30.8730	32.0950	89.0 %
36.4060	33.1860	129.2 %
48.9410	29.3240	99.6 %
2.1050	2.1120	68.6 %
1.3400	1.3940	98.5 %
21.9650	22.5680	98.8 %
25.3950	27.5580	98.1 %
36.0920	37.1850	70.2 %
1.1450	1.1620	106.0 %
30.6550	34.1440	106.1 %
26.1500	26.9500	93.6 %

04 data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. All data filed with AFCE.

Signature:  Environmental Services Co., Inc.

Signature

Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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Phone: (501) 221-2565 Fax: 221-1341

Springdale, AR 72764

Phone: (501) 750-1170 Fax: 750-1170

Price: (501) 372-9332 Fax: 372-9334

Control Number: 9402010035

Type Of Sample : SOIL  
Sample Collected From: CTS-002, INF 1  
Sample Collected By : EAPL PARKER  
Delivered To Lab by : PED EX

Work Order No.: 5719  
Purchase Order:

Analysis of Report: 03/15/94

Analysis of Report: 02/24/94

Sample Date: 02/24/94

Type Of Sample: 1145

Analysis		Parameter	Concentration	Units	Quantity	Units	Method	Ref.
03/09	1200	Antimony	10.2610	MG/KG	7041		7041	SW-846
03/12	1600	Silver	0.70000	MG/KG	7190		7190	SW-846
03/09	0930	Chromium	14.8000	MG/KG	7740		7740	SW-846
03/10	1200	Selenium	9.4370	MG/KG	7210		7210	SW-846
03/09	1530	Copper	15.4100	MG/KG	7950		7950	SW-846
03/09	0930	Zinc	61.7540	MG/KG	7500		7500	SW-846
03/09	1500	Nickel	18.0220	MG/KG	7040		7040	SW-846
03/09	1015	Beryllium	0.5040	MG/KG	7420		7420	SW-846
03/09	0930	Thallium	10.0000	MG/KG	7130		7130	SW-846
03/11	1130	Lead	17.6600	MG/KG	7060		7060	SW-846
03/09	1430	Cadmium	0.6960	MG/KG	7471		7471	SW-846
03/11	1630	Arsenic	5.6340	MG/KG				
03/12	1330	Mercury	0.0706	MG/KG				

Quality Assurance		Duplicates	% Spike
1.0030	1.0030	98.2 %	
21.6040	22.4550	96.9 %	
30.8730	32.0950	89.0 %	
36.4060	33.1860	129.2 %	
33.3410	29.3240	99.6 %	
2.1050	2.1120	68.6 %	
1.3400	1.3940	98.5 %	
21.9650	22.5660	98.8 %	
25.0750	27.0300	63.1 %	
36.0920	37.1950	70.2 %	
1.1450	1.1620	106.0 %	
30.6550	34.1440	108.1 %	
26.1500	26.9500	93.6 %	

GA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. GA PLAN filed with AR-DE.

Signature: *James B. ...*  
Environmental Services Co., Inc.

Signature: *[Signature]*  
Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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Phone: (501) 221-2565 Fax: 221-1341

Phone: (501) 750-1170 Fax: 750-1172

Phone: (901) 372-9332 Fax: 372-9334

Control Number: 9406000036

Type Of Sample : SOIL

Sample Collected From: CTS-002, INT 2

Sample Collected by : EWA FWH FR

Delivered To Lab by : PED EX

Date of Report: 03/15/94

Lab Order Number: 0406000036

Sample Date: 02/20/94

Type Of Sample: 1200

Work Order No.: 5719

Lab Order Number:

Quality Assurance

% Spike

Lab Order

QC Ref.

Method

Units

Quantity

Notes

Concentration

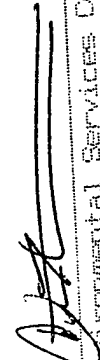
Parameter


Date Time by

Date	Time	by	Parameter	Concentration	Notes	Units	Quantity	Units	Method	QC Ref.	Lab Order	Indicates	Quality Assurance	% Spike
03/09	1200	LAC	Antimony	12.3410		MG/KG	7041		7041	SW-846	1.0030	1.0030	1.0030	98.2 %
03/12	1500	LAC	Silver	< 0.7000		MG/KG	7760		7760	SW-846	21.8340	22.4550	22.4550	96.9 %
03/07	0930	LAC	Chromium	16.3100		MG/KG	7140		7140	SW-846	30.8730	32.0950	32.0950	89.0 %
03/10	1200	LAC	Selenium	0.7270		MG/KG	7740		7740	SW-846	35.4060	33.1860	33.1860	129.2 %
03/08	1530	LAC	Copper	23.4770		MG/KG	7950		7950	SW-846	28.3410	29.3240	29.3240	99.6 %
03/08	0830	LAC	Zinc	74.5460		MG/KG	7520		7520	SW-846	2.1050	2.1120	2.1120	68.6 %
03/08	1500	LAC	Nickel	23.4550		MG/KG	7040		7040	SW-846	1.3900	1.3940	1.3940	98.5 %
03/09	1015	LAC	Beryllium	0.8640		MG/KG	7840		7840	SW-846	21.9650	22.5680	22.5680	98.8 %
03/09	0900	LAC	Thallium	10.0000		MG/KG	7430		7430	SW-846	25.3950	27.6580	27.6580	98.1 %
03/11	1130	LAC	Lead	26.9320		MG/KG	7130		7130	SW-846	36.8920	37.1850	37.1850	70.2 %
03/08	1430	LAC	Cadmium	0.6020		MG/KG	7060		7060	SW-846	1.1450	1.1620	1.1620	106.0 %
03/11	1630	LAC	Arsenic	8.4030		MG/KG	7060		7060	SW-846	30.6580	34.1440	34.1440	108.1 %
03/11	1530	LAC	Mercury T	0.1127		MG/KG	7471		7471	SW-846	26.1500	26.9500	26.9500	93.6 %

\* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with AWCSE.

Signature  Environmental Services Co., Inc.

Signature  Environmental Services Co., Inc.



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Corinada, 1972, 1973

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Phone: (501) 750-1170 Fax: 750-1172

PL 516.5	(921)	372-9382	F 31	372-9384
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44-38861-1000

date of Report: 03/15/94  
Customer Name : CECILIA L. TECHNOLOGIES

[illegible]

2000

# Types of Subsets

Sample Collected From: CFS-201, INF 1

Sample Collected by : Ed. Parker

2008-09-16 14:00

Control Number: 940201053

# 62603

[illegible]

Figure 1 shows a 2D hexagonal lattice of atoms. A central atom is labeled 'A'. To its right is an atom labeled 'B'. Above 'A' is an atom labeled 'C'. Below 'A' is an atom labeled 'D'. To the left of 'A' is an atom labeled 'E'. To the right of 'B' is an atom labeled 'F'. The lattice extends to the left and right, with the right edge labeled 'R'.

Edition	Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Method	Or Ref.
	03/09	1200	LAC	Antimony	< 3.0000		MG/KG		7041	SW-045
	03/12	1600	LAC	Silver	< 0.7000		MG/KG		7760	SW-045
	03/09	0930	LAC	Chromium	8.6120		MG/KG		7190	SW-045
	05/10	1200	LAC	Selenium	0.2550		MG/KG		7740	SW-045
	03/03	1530	LAC	Copper	9.1920		MG/KG		7210	SW-045
	05/03	0800	LAC	Zinc	27.2710		MG/KG		7950	SW-045
	03/03	1500	LAC	Nickel	7.8600		MG/KG		7530	SW-045
	03/09	1015	LAC	Beryllium	0.2620		MG/KG		7090	SW-045
	03/09	0900	LAC	Thallium	< 10.0000		MG/KG		7640	SW-046
	03/11	1130	LAC	Lead	15.8730		MG/KG		7420	SW-046
	03/03	1430	LAC	Cadmium	0.5690		MG/KG		7130	SW-046
	03/11	1630	LAC	Arsenic	10.2070		MG/KG		7060	SW-046
	03/12	1330	LAC	Mercury T	0.1065		MG/KG		7471	SW-046


Figure 1. The structure of the proposed model.

Duplicates	% Spike	Recovery
1,0000	1,0000	98.2 %
21,8340	22,4550	96.9 %
30,8730	32,0790	89.0 %
36,4060	33,1860	129.2 %
28,3410	29,3240	99.6 %
2,1050	2,1130	68.6 %
1,3400	1,3940	98.5 %
21,9650	22,5630	98.8 %
26,8950	27,6530	88.1 %
36,0720	37,1850	70.2 %
1,1450	1,1620	106.0 %
30,6550	34,1440	103.1 %
26,1500	26,9500	93.6 %

of the sample or standard on the same date.

All analytical equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. (b) (6) filed with ARO/E.

[illegible]

 Environmental Services Co., Inc.

Signature \_\_\_\_\_

James O'Brien, Jr.  
Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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Phone: (501) 750-1170 Fax: 750-1172

Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Date: 02/24/94

Time Of Sample: 1430

Type Of Sample : SOIL

Sample Collected From: NEF-004, INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010538

Work Order No.: 5719

Purchase Order:

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Method	Edition	Duplicates	% Spike
03/09	1200	LAC	Antimony	10.2550		MG/KG	7041	7041	SW-846	1.0030	98.2 *
03/12	1600	LAC	Silver	< 0.7000		MG/KG	7760	7760	SW-846	21.8340	96.9 *
03/09	0930	LAC	Chromium	14.2750		MG/KG	7190	7190	SW-846	30.8730	89.0 *
03/10	1200	LAC	Selenium	< 0.2000		MG/KG	7740	7740	SW-846	36.4060	129.2 *
03/08	1530	LAC	Copper	14.5100		MG/KG	7210	7210	SW-846	28.3410	99.6 *
03/08	0800	LAC	Zinc	75.3330		MG/KG	7950	7950	SW-846	2.1050	68.6 *
03/08	1500	LAC	Nickel	13.4710		MG/KG	7520	7520	SW-846	1.3400	98.5 *
03/09	1015	LAC	Beryllium	0.5100		MG/KG	7090	7090	SW-846	21.9650	98.8 *
03/09	0900	LAC	Thallium	< 10.0000		MG/KG	7840	7840	SW-846	25.8950	88.1 *
03/11	1130	LAC	Lead	45.3140		MG/KG	7420	7420	SW-846	36.0920	70.2 *
03/08	1430	LAC	Cadmium	< 0.5000		MG/KG	7130	7130	SW-846	1.1450	106.0 *
03/11	1630	LAC	Arsenic	10.9220		MG/KG	7060	7060	SW-846	30.6550	108.1 *
03/12	1330	LAC	Mercury T	0.1250		MG/KG	7471	7471	SW-846	26.1500	93.6 *

## Quality Assurance

\* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

*James O'Brien Jr.*

Signature



# Environmental Services Co., Inc.

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Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Date: 02/24/94

Time Of Sample: 1445

Type Of Sample : SOIL

Sample Collected From: MEF-003, INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010539

Work Order No.: 5719

Purchase Order:

## Analysis

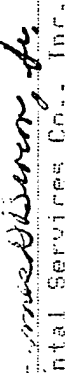
Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition
03/09	1200	LAC	Antimony	10.6370		MG/KG	7041		7041	SW-846
03/12	1600	LAC	Silver	<	0.7000	MG/KG	7760		7760	SW-846
03/09	0930	LAC	Chromium	11.1930		MG/KG	7190		7190	SW-846
03/10	1200	LAC	Selenium	1.5300		MG/KG	7740		7740	SW-846
03/08	1530	LAC	Copper	6.1440		MG/KG	7210		7210	SW-846
03/08	0800	LAC	Zinc	25.3760		MG/KG	7950		7950	SW-846
03/08	1500	LAC	Nickel	6.3730		MG/KG	7520		7520	SW-846
03/09	1015	LAC	Beryllium	0.3430		MG/KG	7090		7090	SW-846
03/09	0900	LAC	Thallium	<	10.0000	MG/KG	7840		7840	SW-846
03/11	1130	LAC	Lead	22.0590		MG/KG	7420		7420	SW-846
03/08	1430	LAC	Cadmium	<	0.5000	MG/KG	7130		7130	SW-846
03/11	1630	LAC	Arsenic	4.4770		MG/KG	7060		7060	SW-846
03/12	1330	LAC	Mercury T	0.1524		MG/KG	7471		7471	SW-846

Quality Assurance		% Spike
Duplicates		Recovery
1.0030	1.0350	98.2 %
21.8340	22.4550	96.9 %
30.8730	32.0950	89.0 %
36.4060	33.1860	129.2 %
28.3410	29.3240	99.6 %
2.1050	2.1120	68.6 %
1.3400	1.3940	98.5 %
21.9650	22.5690	98.8 %
25.8950	27.6580	88.1 %
36.0920	37.1850	70.2 %
1.1450	1.1620	106.0 %
30.6550	34.1440	108.1 %
26.1500	26.9500	93.6 %

\* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature  Environmental Services Co., Inc.

Signature  Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/24/94

Time Of Sample: 1500

Type Of Sample : SOIL

Sample Collected From: NEF-003, INT 2

Sample Collected By : EAPL P494EK

Delivered To Lab By : PED EX

Control Number: 9402010540

Work Order No.: 5719


Purchase Order:

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
											Duplicates	% Spike Recovery
03/09	1200	LAC	Antimony	16.37000		MG/KG	7041		7041	SM-846	1.00300	1.03500 98.2 %
03/12	1600	LAC	Silver	0.70000		MG/KG	7760		7760	SM-846	21.83400	22.45500 96.9 %
03/09	0930	LAC	Chromium	11.60000		MG/KG	7190		7190	SM-846	30.87300	32.09500 89.0 %
03/10	1200	LAC	Selenium	1.2140		MG/KG	7740		7740	SM-846	1.55000	1.48700 129.2 %
03/09	1530	LAC	Copper	5.3650		MG/KG	7210		7210	SM-846	28.3410	29.32400 99.6 %
03/09	0930	LAC	Zinc	26.91800		MG/KG	7930		7930	SM-846	2.10500	2.11200 68.6 %
03/09	1500	LAC	Nickel	7.05500		MG/KG	7530		7530	SM-846	1.34000	1.39400 98.5 %
03/09	1015	LAC	Beryllium	0.3430		MG/KG	7090		7090	SM-846	1.00400	1.00500 98.8 %
03/09	0900	LAC	Thallium	10.00000		MG/KG	7840		7840	SM-846	25.89500	27.65900 88.1 %
03/11	1130	LAC	Lead	25.5710		MG/KG	7420		7420	SM-846	55.09200	37.18500 70.2 %
03/09	1430	LAC	Cadmium	0.50000		MG/KG	7130		7130	SM-846	1.14500	1.16200 106.0 %
03/11	1630	LAC	Arsenic	16.1590		MG/KG	7060		7060	SM-846	30.65500	34.14400 108.1 %
03/12	1330	LAC	Mercury T	0.1187		MG/KG	7471		7471	SM-846	26.15000	26.95000 93.6 %

\* Data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. Laboratory listed with APTCSE.

Signature  Environmental Services Co., Inc.

Signature  Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/24/94

Time Of Sample: 1530

Type Of Sample : SOIL

Sample Collected From: NEF-002, INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : PED EX

Control Number: 9402010541

Work Order No.: 5719


Purchase Order:

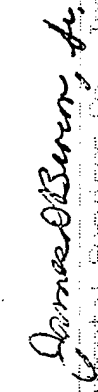
## ANALYSIS

QTY	UNIT	PARAMETER	CONCENTRATION	NOTES	UNITS	QUANTITY	UNITS	METHOD	EDITION	QUALITY ASSURANCE	% SOIKE
03/09	LAC	Antimony	11.4740		MG/KG	7041		7041	SW-846	1.5100	1.4740
03/09	LAC	Silver	<	0.7000	MG/KG	7740		7740	SW-846	21.6450	19.5690
03/09	LAC	Chromium	22.6230		MG/KG	7150		7150	SW-846	40.9070	57.1960
03/09	LAC	Selenium	2.6260		MG/KG	7740		7740	SW-846	1.5500	1.4670
03/09	LAC	Copper	26.7950		MG/KG	7210		7210	SW-846	35.7600	50.5290
03/09	LAC	Zinc	161.3250		MG/KG	7050		7050	SW-846	2.5000	2.3800
03/09	LAC	Nickel	14.8720		MG/KG	7520		7520	SW-846	1.5500	1.5550
03/09	LAC	Beryllium	0.5770		MG/KG	7050		7050	SW-846	1.0040	1.0050
03/09	LAC	Thallium	<	10.0000	MG/KG	7340		7340	SW-846	28.0520	25.9600
03/09	LAC	Lead	59.8250		MG/KG	7420		7420	SW-846	38.6960	35.7450
03/09	LAC	Cadmium	1.1540		MG/KG	7130		7130	SW-846	1.0350	1.0430
03/09	LAC	Arsenic	13.3390		MG/KG	7060		7060	SW-846	34.5690	32.6130
03/12	LAC	Mercury T	0.0710		MG/KG	7471		7471	SW-846	28.2300	28.6100

\* QA data shown is from a different sample or standard on the same date.

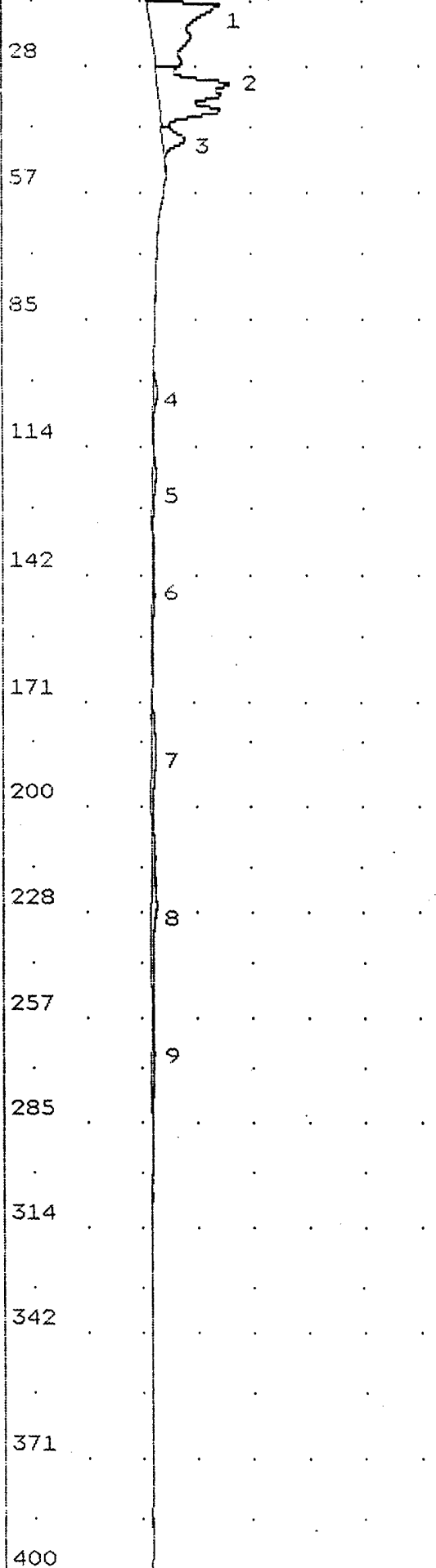
All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with AFDCE.

Signature  Environmental Services Co., Inc.

Signature  Environmental Services Co., Inc.



0 2 4 6 8 10  
 (x 10 mV)



Time Printed: Feb 25,94 15:39  
 Sample Time: Feb 25,94 15:22  
 Method  
 Slope Up 2.000 mV/Sec  
 Slope Down 6.000 mV/Sec  
 Min Area 100.0 mVSec  
 Min Height 0.000 mV  
 Analysis Delay 0.0 sec  
 Window Percent 20.0 %  
 Det Flow 15 ml/min  
 B/F Flow 15 ml/min  
 Aux Flow 0 ml/min  
 Oven Temp 40 C  
 Amb Temp 32 C  
 Max Gain 2  
 Analysis Time 400.0 sec

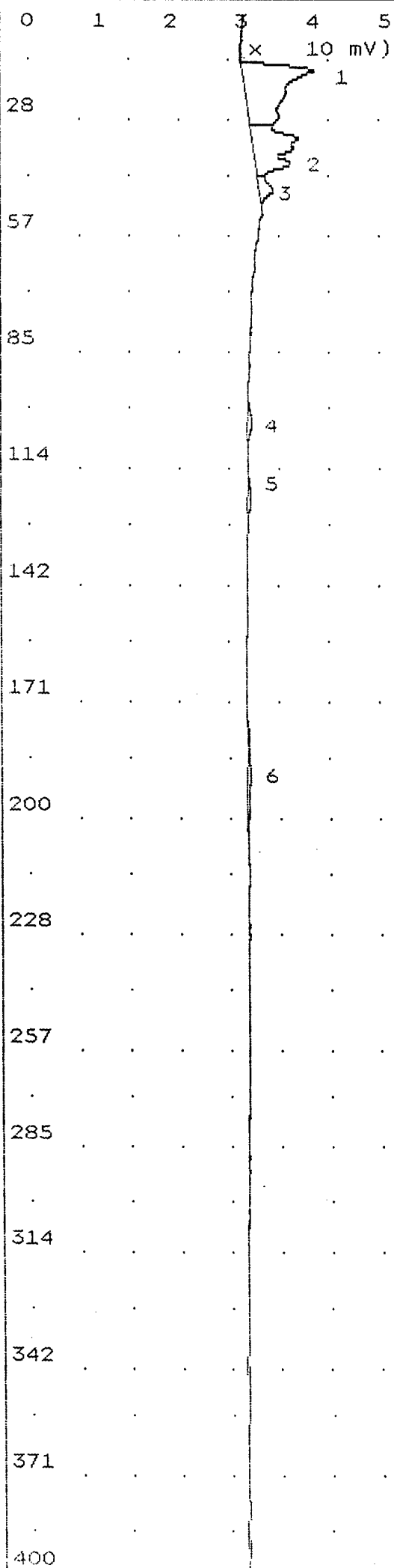
Peak Report			
PK	Compound Name	Area/Conc	R.T.
1	Unknown	155.2 mVS	12.5
2	Unknown	146.1 mVS	30.5
3	Unknown	22.21 mVS	43.0
4	Unknown	7.246 mVS	100.1
5	Unknown	7.112 mVS	118.4
6	Unknown	7.415 mVS	143.4
7	Unknown	14.83 mVS	181.2
8	Unknown	28.07 mVS	225.0
9	Unknown	10.89 mVS	265.3

Notes  
 Operator: Mark D. Henson  
 Site: 223rd CCSQ  
 Arkansas ANG  
 Hot Springs, AR

sample: air blank

decontaminatd syringe with reage  
 nt grade deionized water and let  
 air dry





Time Printed: Feb 25,94 17:00  
Sample Time: Feb 25,94 16:52

#### Method

Slope Up 2.000 mV/Sec  
Slope Down 6.000 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

#### Peak Report

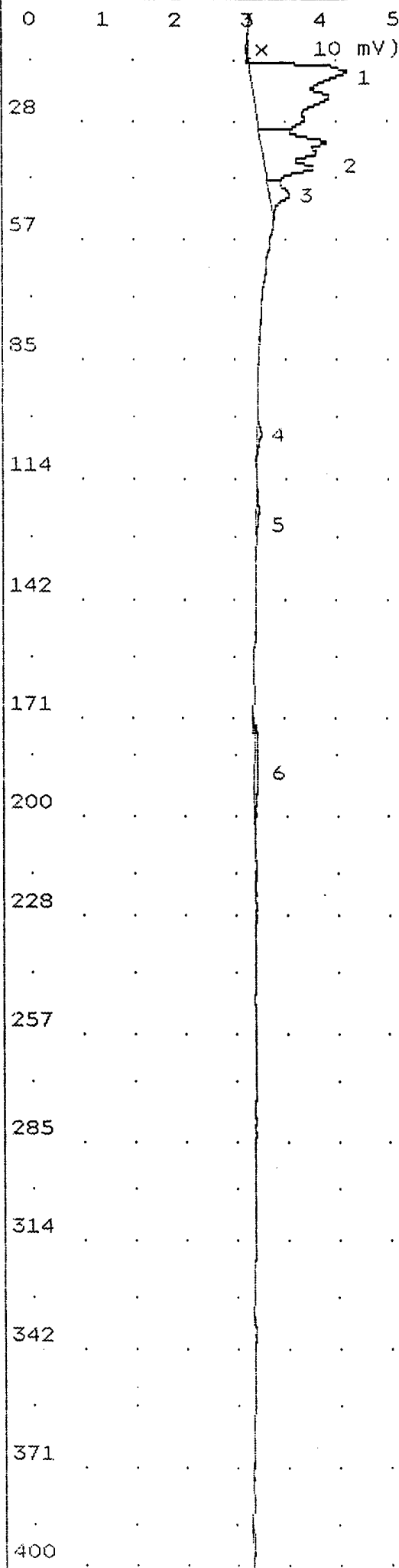
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	91.16 mVS	14.0
2	Unknown	54.28 mVS	31.1
3	Unknown	8.673 mVS	43.5
4	Unknown	2.966 mVS	100.9
5	Unknown	2.013 mVS	115.2
6	Unknown	6.456 mVS	185.6

#### Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: nwd-001 bh  
int 2





Time Printed: Feb 25, 94 17:15  
 Sample Time: Feb 25, 94 17:05

Method

Slope Up 2.000 mV/Sec  
 Slope Down 6.000 mV/Sec  
 Min Area 100.0 mVSec  
 Min Height 0.000 mV  
 Analysis Delay 0.0 sec  
 Window Percent 20.0 %  
 Det Flow 15 ml/min  
 B/F Flow 15 ml/min  
 Aux Flow 0 ml/min  
 Oven Temp 40 C  
 Amb Temp 32 C  
 Max Gain 2  
 Analysis Time 400.0 sec

Peak Report

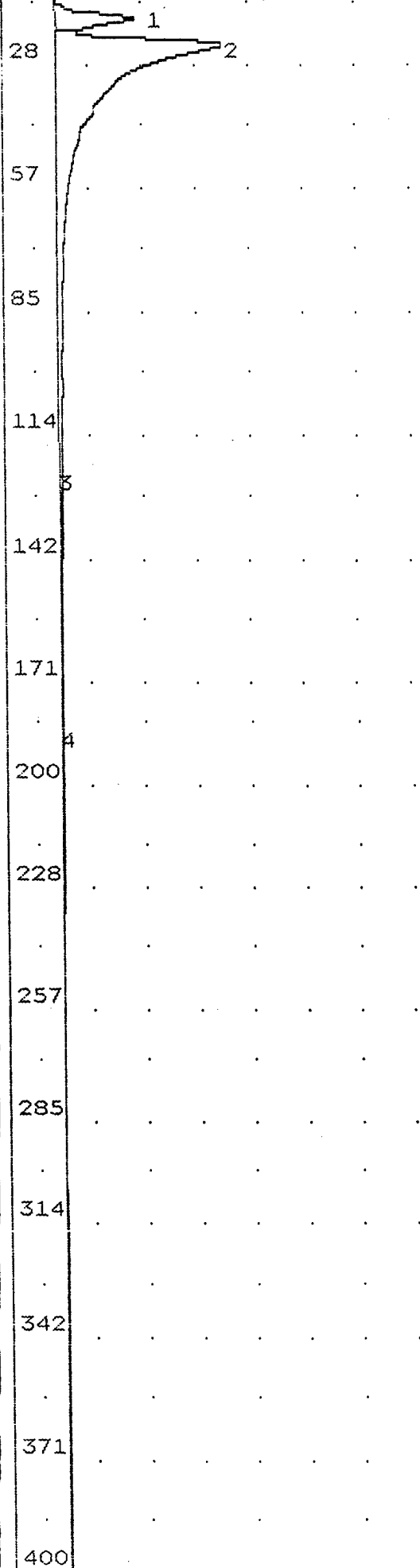
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	143.8 mVS	14.4
2	Unknown	72.97 mVS	31.4
3	Unknown	12.76 mVS	43.7
4	Unknown	2.853 mVS	100.9
5	Unknown	2.734 mVS	119.3
6	Unknown	6.425 mVS	184.6

Notes

Operator: Mark D. Henson  
 Site: 223rd CCSQ  
 Arkansas ANG  
 Hot Springs, AR  
  
 sample: nwd-004 bh  
 int 1



0 1 2 3 4 5  
(x 100 mV)



Time Printed: Feb 25,94 17:28  
Sample Time: Feb 25,94 17:17

#### Method

Slope Up	0.100	mV/Sec
Slope Down	0.100	mV/Sec
Min Area	100.0	mVSec
Min Height	0.000	mV
Analysis Delay	0.0	sec
Window Percent	20.0	%
Det Flow	15	ml/min
B/F Flow	15	ml/min
Aux Flow	0	ml/min
Oven Temp	40	C
Amb Temp	32	C
Max Gain	2	
Analysis Time	400.0	sec

#### Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	334.7 mVS	15.7
2	Unknown	3.505 VSec	21.8
3	Unknown	9.093 mVS	118.4
4	Unknown	6.192 mVS	183.8

#### Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: nwd-003 bh  
int 1

decontaminated syringe with  
two separate vials of methanol  
headspace.



Time Printed: Feb 25, 94 17:40

Sample Time: Feb 25, 94 17:31

Method

Slope Up 0.500 mV/Sec  
Slope Down 1.500 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
S/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

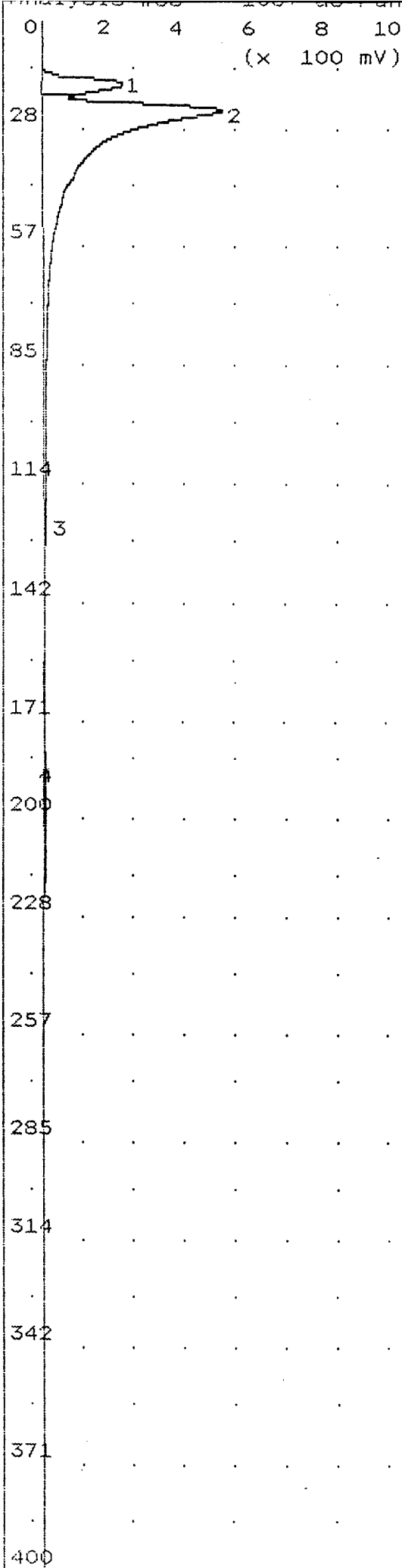
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	835.4 mVS	15.8
2	Unknown	6.145 VSec	22.1
3	Unknown	4.628 mVS	118.0
4	Unknown	10.43 mVS	186.6

Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG3  
Hot Springs, AR

sample: nef-001 bh  
int 2





Time Printed: Feb 25,94 17:54

Sample Time: Feb 25,94 17:44

Method

Slope Up 0.100 mV/Sec  
Slope Down 0.100 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

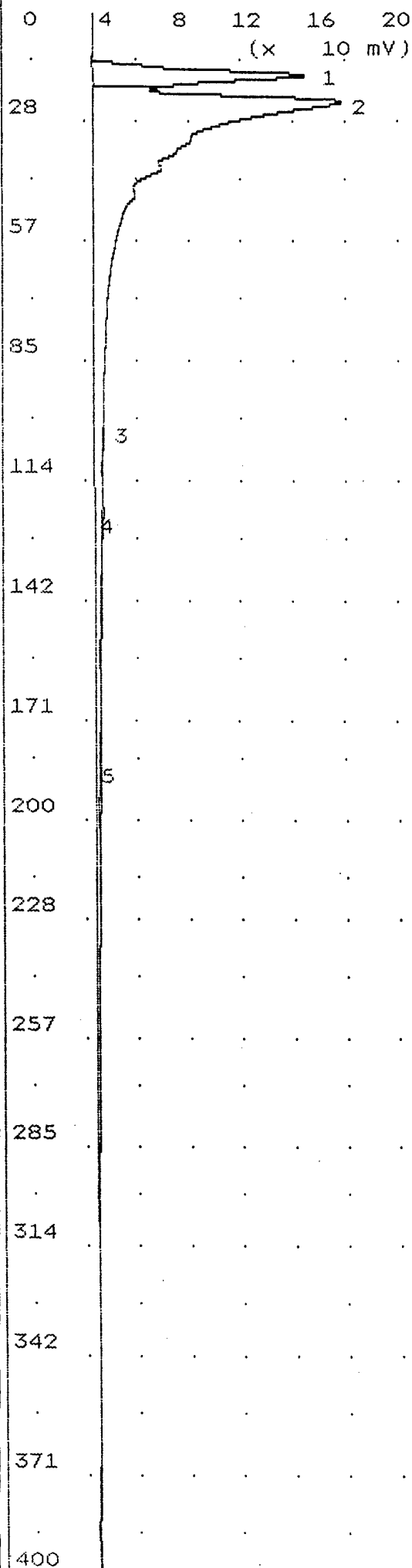
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	405.9 mVS	15.6
2	Unknown	2.594 VSec	22.0
3	Unknown	4.331 mVS	101.3
4	Unknown	10.28 mVS	118.9
5	Unknown	9.001 mVS	184.8

Notes

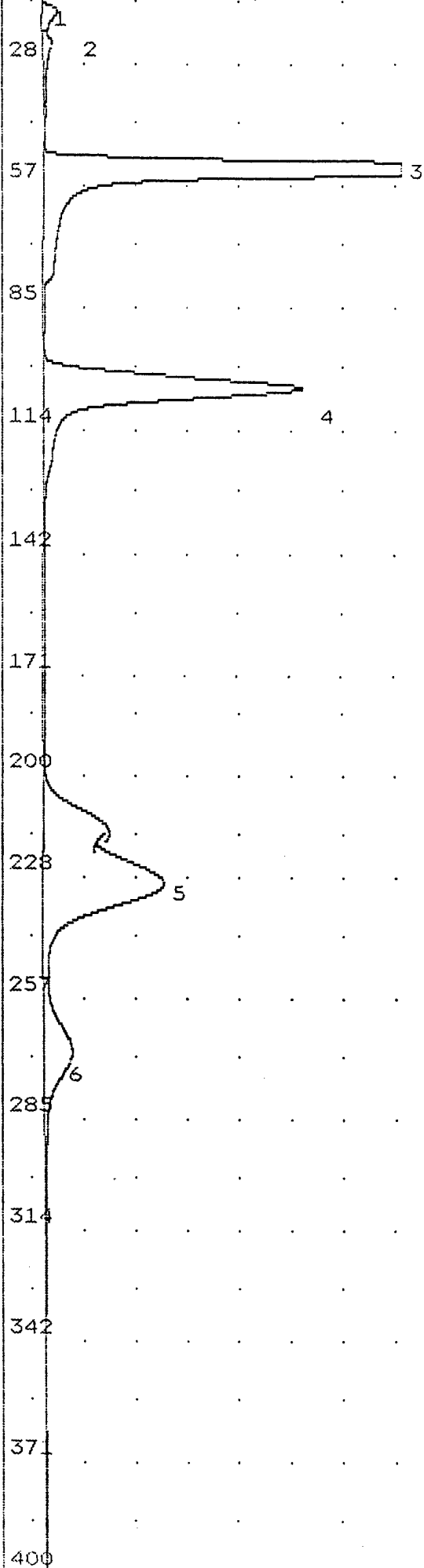
Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: nwd-002 bh  
int 2





0 2 4 6 8 10  
(x 100 mV)



Time Printed: Feb 25,94 18:06

Sample Time: Feb 25,94 17:59

# Method

Slope Up 1.500 mV/Sec  
Slope Down 4.500 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	165.8 mVS	14.5
2	Unknown	276.9 mVS	21.7
3	benzene	1.121 PPM1	51.3
4	toluene	865.0 ppb	102.5
5	ebenz/m,p xylene	1.799 PPM1	228.0
6	o-xylene	565.5 ppb	267.7

PPM1 = Alarm 1 PPM2 = Alarm2

## Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: 1 ppm btex std recal.  
before reintegration



0 2 4 6 8 10  
(x 100 mV)

Time Printed: Feb 25,94 18:10

Sample Time: Feb 25,94 17:59

Method

Slope Up 1.500 mV/Sec  
Slope Down 4.500 mV/Sec  
Min Area 100.0 mVSec  
Min Height 0.000 mV  
Analysis Delay 0.0 sec  
Window Percent 20.0 %  
Det Flow 15 ml/min  
B/F Flow 15 ml/min  
Aux Flow 0 ml/min  
Oven Temp 40 C  
Amb Temp 32 C  
Max Gain 2  
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	165.8 mVS	14.5
2	Unknown	277.0 mVS	21.7
3	benzene	1.000 PPM1	51.3
4	toluene	1.000 PPM1	102.5
5	ebenz/m,p xylene	3.000 PPM1	228.0
6	o-xylene	1.002 PPM1	267.7

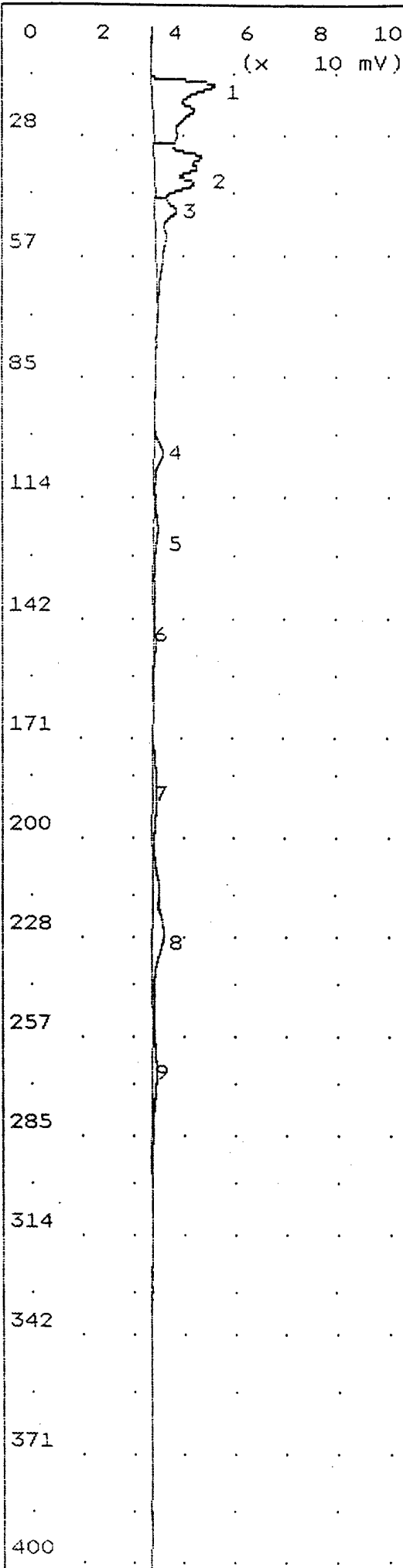
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

Operator: Mark D. Henson  
Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: 1 ppm btex std recal.  
reintegrated





Time Printed: Feb 25,94 18:20

Sample Time: Feb 25,94 18:13

## Method

Slope Up 2.000 mV/Sec

Slope Down 6.000 mV/Sec

Min Area 100.0 mVSec

Min Height 0.000 mV

Analysis Delay 0.0 sec

Window Percent 20.0 %

Det Flow 15 ml/min

B/F Flow 15 ml/min

Aux Flow 0 ml/min

Oven Temp 40 C

Amb Temp 33 C

Max Gain 2

Analysis Time 400.0 sec

## Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	157.7 mVS	14.4
2	Unknown	118.9 mVS	31.8
3	Unknown	58.42 mVS	44.6
4	Unknown	15.01 mVS	101.7
5	Unknown	11.10 mVS	119.2
6	Unknown	9.029 mVS	140.4
7	Unknown	17.12 mVS	186.0
8	Unknown	72.29 mVS	225.4
9	Unknown	23.34 mVS	263.7

## Notes

Operator: Mark D. Henson

Site: 223rd CCSQ  
Arkansas ANG  
Hot Springs, AR

sample: air blank



13715 West Markham  
P.O. Box 5644  
Little Rock, AR 72215

Order: (501) 221-2565 Fax: 221-1341

Environmental Services Co., Inc.  
1107 Century  
Springdale, AR 72764

Phone: (501) 750-1170 Fax: 750-1172

1704 Shelby Oaks Dr. N.  
Memphis, TN 38134

Phone: (901) 372-9532 Fax: 372-9334

Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/24/94

Time Of Sample: 1540

Type Of Sample : SOIL

Sample Collected From: NEF-002, INT 2

Sample Collected By : EAGL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010542

Work Order No.: 5719

Purchase Order:

### Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	or Ref.	Edition
03/05	1200	LAC	Antimony	6.0520		MG/KG	7041		7041	SW-846	
03/12	1600	LAC	Silver	0.7300		MG/KG	7760		7760	SW-846	
03/09	0730	LAC	Chromium	22.0820		MG/KG	7190		7190	SW-846	
03/10	1200	LAC	Selenium	3.5160		MG/KG	7740		7740	SW-846	
03/08	1530	LAC	Copper	20.3650		MG/KG	7210		7210	SW-846	
03/08	0600	LAC	Zinc	99.5710		MG/KG	7950		7950	SW-846	
03/08	1500	LAC	Nickel	24.2060		MG/KG	7520		7520	SW-846	
03/07	1015	LAC	Beryllium	0.7730		MG/KG	7090		7090	SW-846	
03/09	0600	LAC	Thallium	10.0000		MG/KG	7640		7640	SW-846	
03/11	1130	LAC	Lead	23.0040		MG/KG	7430		7430	SW-846	
03/18	1430	LAC	Cadmium	0.5590		MG/KG	7130		7130	SW-846	
03/11	1630	LAC	Arsenic	14.7160		MG/KG	7050		7050	SW-846	
03/12	1330	LAC	Mercury T	0.1865		MG/KG	7471		7471	SW-846	

Quality Assurance		% Spike Recovery	
Duplicates			
1.5100	1.4740	96.3	*
21.6450	19.5690	97.6	*
40.5090	37.1960	96.1	*
1.5500	1.4870	129.2	*
35.7630	30.5270	131.6	*
2.5560	2.5830	68.6	*
1.5050	1.5560	118.3	*
1.0040	1.0050	98.8	*
28.0520	25.5600	102.4	*
33.8960	35.7430	90.7	*
1.0030	1.0430	101.1	*
34.5690	32.8130	107.2	*
38.2300	36.7100	107.7	*

7 (b) data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with EPA Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above, the PLAN filed with AUCOE.

Signature:  Environmental Services Co., Inc.  
Signature:  Environmental Services Co., Inc.



# Environmental Services Co., Inc.

13715 West Markham  
P.O. Box 5644  
Little Rock, AR 72215

1107 Century  
Springdale, AR 72764

1704 Shelby Oaks Dr. N.  
Memphis, TN 38134

Phone: (501) 221-2565 Fax: 221-1341

Phone: (501) 750-1170 Fax: 750-1172

Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Date: 02/24/94

Time Of Sample: 1550

Type Of Sample : SOIL

Sample Collected From: NEF-001, INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010543

Work Order No.: 5719

Purchase Order:

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
											Duplicates	% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000	MG/KG	7041	1.5100	7041	SW-846	1.4740	96.3 *
03/12	1600	LAC	Silver	<	0.0700	MG/KG	7760	21.6450	7760	SW-846	19.5690	97.6 *
03/09	0930	LAC	Chromium	<	5.0000	MG/KG	7190	40.9090	7190	SW-846	37.1960	86.1 *
03/10	1200	LAC	Selenium		5.2000	MG/KG	7740	1.5800	7740	SW-846	1.4870	129.2 *
03/08	1530	LAC	Copper		10.4650	MG/KG	7210	35.7600	7210	SW-846	30.5290	131.6 *
03/08	0800	LAC	Zinc		38.5840	MG/KG	7950	2.5560	7950	SW-846	2.5880	68.6 *
03/08	1500	LAC	Nickel		3.3630	MG/KG	7520	1.5550	7520	SW-846	1.5560	118.3 *
03/09	1015	LAC	Beryllium		0.2210	MG/KG	7090	1.0040	7090	SW-846	1.0050	98.8 *
03/09	0900	LAC	Thallium	<	10.0000	MG/KG	7840	28.0520	7840	SW-846	25.9800	102.4 *
03/11	1130	LAC	Lead		27.6110	MG/KG	7420	38.8960	7420	SW-846	35.7450	80.7 *
03/08	1430	LAC	Cadmium		0.5310	MG/KG	7130	1.0380	7130	SW-846	1.0430	101.1 *
03/11	1630	LAC	Arsenic		6.9860	MG/KG	7060	34.5890	7060	SW-846	32.8130	107.2 *
03/12	1330	LAC	Mercury T		0.1208	MG/KG	7471	28.2300	7471	SW-846	28.6100	107.6 *

\* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature

Signature

*James O'Brien, Jr.*



# Environmental Services Co., Inc.

13715 West Markham  
 P.O. Box 5644  
 Little Rock, AR 72215  
 Phone: (501) 221-2565 Fax: 221-1341  
 1107 Century  
 Springdale, AR 72764  
 Phone: (501) 750-1170 Fax: 750-1172  
 1704 Shelby Oaks Dr. N.  
 Memphis, TN 38134  
 Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94  
 Customer Name: OPERATIONAL TECHNOLOGIES  
 Sample Date: 02/24/94  
 Time Of Sample: 1600  
 Type Of Sample : SOIL  
 Sample Collected From: NSF-001, INT 2  
 Sample Collected By : EARL PARKER  
 Delivered To Lab By : FED EX  
 Control Number: 9402010544  
 Work Order No.: 5/19  
 Purchase Order:

Analysis										Quality Assurance	
Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	or Ref.	Edition
03/09	1200	LAC	Antimony	6.0140		MG/KG			7041	94-846	
03/12	1600	LAC	Silver	<	0.7000	MG/KG			7760	94-846	
03/09	0930	LAC	Chromium	23.7100		MG/KG			7190	94-846	
03/10	1500	LAC	Selenium	2.2000		MG/KG			7740	94-846	
03/03	1530	LAC	Copper	5.4300		MG/KG			7210	94-846	
03/03	0600	LAC	Zinc	43.0020		MG/KG			7950	94-846	
03/03	1500	LAC	Nickel	8.6100		MG/KG			7520	94-846	
03/09	1015	LAC	Beryllium	0.3690		MG/KG			7090	94-846	
03/09	0900	LAC	Thallium	<	10.0000	MG/KG			7040	94-846	
03/11	1130	LAC	Lead	22.8110		MG/KG			7420	94-846	
03/03	1430	LAC	Cadmium	0.6220		MG/KG			7130	94-846	
03/11	1630	LAC	Arsenic	12.1310		MG/KG			7060	94-846	
03/12	1330	LAC	Mercury T	0.1647		MG/KG			7471	94-846	

Duplicates	% Spike	Recovery
1.5100	1.4740	96.3
21.6450	19.5690	97.6
40.9090	37.1950	86.1
1.5300	1.4870	129.2
35.7500	30.5290	131.6
2.5550	2.5580	68.6
1.5550	1.5560	118.3
1.0040	1.0050	98.8
28.0520	25.9300	102.4
33.6950	35.7450	90.7
1.0350	1.0430	101.1
34.5690	32.8130	107.2
23.7900	23.4100	107.6 *

\* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136.  
 A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes.  
 Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with APOPE.

Signature:  Environmental Services Co., Inc.  
 Signature:  Environmental Services Co., Inc.



# Environmental Services Co., Inc.

13715 West Markham  
P.O. Box 5644  
Little Rock, AR 72215

1107 Century  
Springdale, AR 72764

1704 Shelby Oaks Dr. N.  
Memphis, TN 38134

Phone: (501) 221-2565 Fax: 221-1341

Phone: (501) 750-1170 Fax: 750-1172

Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Date: 02/25/94

Time Of Sample: 0940

Type Of Sample : SOIL

Sample Collected From: ODS 004 BH INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010551

Work Order No.:

Purchase Order:

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Method	Edition or Ref.
03/09	1200	LAC	Antimony	3.6780		MG/KG	7041		SW-846
03/12	1600	LAC	Silver	<	0.7000	MG/KG	7760		SW-846
03/09	0930	LAC	Chromium		12.9450	MG/KG	7190		SW-846
03/10	1200	LAC	Selenium	<	0.2000	MG/KG	7740		SW-846
03/08	1530	LAC	Copper		10.0690	MG/KG	7210		SW-846
03/08	0800	LAC	Zinc		39.7490	MG/KG	7950		SW-846
03/08	1500	LAC	Nickel		13.7220	MG/KG	7520		SW-846
03/09	1015	LAC	Reryllium		0.5020	MG/KG	7090		SW-846
03/09	0900	LAC	Thallium	<	10.0000	MG/KG	7840		SW-846
03/11	1130	LAC	Lead		21.0310	MG/KG	7420		SW-846
03/08	1430	LAC	Cadmium		0.7530	MG/KG	7130		SW-846
03/11	1630	LAC	Arsenic		6.6550	MG/KG	7060		SW-846
03/12	1330	LAC	Mercury T		0.0472	MG/KG	7471		SW-846

Quality Assurance			% Spike
Duplicates			Recovery
1.5100	1.4740		96.3 %
21.6450	19.5690		97.6 %
40.9090	37.1960		86.1 %
1.5800	1.4870		129.2 %
35.7600	30.5290		131.6 %
2.5560	2.5880		68.6 %
1.5550	1.5560		118.3 %
1.0040	1.0050		98.8 %
28.0520	25.9800		102.4 %
38.8960	35.7450		80.7 %
1.0380	1.0430		101.1 %
34.5890	32.8130		107.2 %
28.2300	28.6100		107.6 %

\* QA data shown is from a different sample or standard on the same date.

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Signature  Environmental Services Co., Inc.

Signature  Environmental Services Co., Inc.



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ENVIRONMENTAL SERVICES, INC.  
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Springdale, AR 72764

1704 Shelby Oaks Dr. N.  
Memphis, TN 38134

Phone: (501) 750-1170 Fax: 750-1172

Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/25/94

Time Of Sample: 0950

Type Of Sample : SUIL

Sample Collected From: 003 002 BH INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010552

Work Order No.:

Purchase Order:

#### Analysis

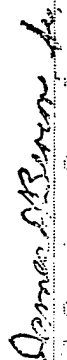
Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	or Ref.	Edition
03/09	1200	LAC	Antimony	< 3.00000		MG/KG	7041		7041	SU-846	
03/12	1600	LAC	Silver	< 0.70000		MG/KG	7790		7790	SU-846	
03/09	0930	LAC	Chromium	8.80000		MG/KG	7190		7190	SU-846	
03/10	1200	LAC	Selenium	< 0.20000		MG/KG	7790		7790	SU-846	
03/09	1530	LAC	Copper	6.25000		MG/KG	7210		7210	SU-846	
03/09	0600	LAC	Zinc	10.39500		MG/KG	7970		7970	SU-846	
03/09	1500	LAC	Nickel	4.07000		MG/KG	7520		7520	SU-846	
03/09	1015	LAC	Beryllium	0.25000		MG/KG	7090		7090	SU-846	
03/09	0900	LAC	Thallium	< 10.00000		MG/KG	7840		7840	SU-846	
03/11	1130	LAC	Lead	11.00000		MG/KG	7420		7420	SU-846	
03/09	1430	LAC	Cadmium	0.72100		MG/KG	7130		7130	SU-846	
03/11	1630	LAC	Arsenic	10.17400		MG/KG	7060		7060	SU-846	
03/12	1330	LAC	Mercury	T 0.00002		MG/KG	7471		7471	SU-846	

Quality Assurance		% Spike	
Duplicates	Recovery	Duplicates	Recovery
1.51000	1.4/40	96.3 *	96.3 *
21.64500	19.50900	97.6 *	97.6 *
40.90700	37.19600	86.1 *	86.1 *
1.55000	1.43700	129.2 *	129.2 *
35.76000	30.52900	131.6 *	131.6 *
2.55000	2.50000	68.6 *	68.6 *
1.55000	1.55000	118.3 *	118.3 *
1.00000	1.00000	98.8 *	98.8 *
25.05000	25.90000	102.4 *	102.4 *
35.50000	35.74500	80.7 *	80.7 *
1.03000	1.04300	101.1 *	101.1 *
34.50900	32.81300	107.2 *	107.2 *
23.23000	28.61000	107.6 *	107.6 *

\* (A) data shown is from a different sample or standard on the same date.

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Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with AUECSE.

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# Environmental Services Co., Inc.

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Springdale, AR 72764

Phone: (501) 221-2565 Fax: 221-1341 Phone: (501) 750-1170 Fax: 710-1172 Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94  
Customer Name: OPERATIONAL TECHNOLOGIES  
Sample Date: 02/25/94  
Type Of Sample: SOIL  
Sample Collected From: ODS 001 BH INF 1  
Sample Collected By: EARL PARKER  
Control Number: 9000000553  
Delivered To Lab By: FED EX  
Work Order No.:  
Purchase Order:

Analysis					Quality Assurance		
Date	Time	By	Parameter	Concentration	Units	Quantity	% Spike
03/07	1200	LAC	Antimony	< 3.0000	MG/KG	7041	96.3 *
03/12	1600	LAC	Silver	< 0.7000	MG/KG	7740	97.6 *
03/07	0930	LAC	Chromium	< 5.0000	MG/KG	7190	86.1 *
03/10	1200	LAC	Selenium	< 0.2000	MG/KG	7740	129.2 *
03/08	1530	LAC	Copper	26.1910	MG/KG	7210	131.6 *
03/08	0800	LAC	Zinc	143.8100	MG/KG	7950	68.6 *
03/08	1500	LAC	Nickel	3.6910	MG/KG	7520	118.3 *
03/07	1015	LAC	Beryllium	0.2350	MG/KG	7090	98.8 *
03/07	0900	LAC	Thallium	< 10.0000	MG/KG	7040	102.4 *
03/11	1130	LAC	Lead	28.5450	MG/KG	7420	80.7 *
03/08	1430	LAC	Cadmium	0.9520	MG/KG	7130	101.1 *
03/11	1630	LAC	Arsenic	3.0690	MG/KG	7060	107.2 *
03/12	1330	LAC	Mercury T	0.0636	MG/KG	7471	107.6 *
					Duplicates		
					1.5100	1.4740	
					21.6450	19.5650	
					40.9050	37.1960	
					1.5300	1.4870	
					35.7600	30.5250	
					2.5560	2.5830	
					1.5550	1.5560	
					1.0040	1.0050	
					23.0520	25.9000	
					33.6960	35.7450	
					1.0030	1.0430	
					34.5890	32.8130	
					28.2300	28.6100	

All data shown is from a different sample or standard on the same date.

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 Environmental Services Co., Inc.  
 1724 Shelby Oaks Dr., N.  
 Memphis, TN 38134  
 Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94  
 Customer Name: OPERATIONAL TECHNOLOGIES  
 Sample Date: 02/25/94  
 Type Of Sample: SOIL  
 Control Number: 9402010554  
 Sample Collected From: ODS 001 B4 INT 2  
 Sample Collected By: EARL PARKER  
 Delivered To Lab By: PED EX  
 Work Order No.:  
 Purchase Order:

Analysis										Quality Assurance	
Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	or Ref.	Edition
03/09	1200	LAC	Antimony	<	3.00000	MG/KG			7041	30-846	
03/12	1400	LAC	Silver	<	0.70000	MG/KG			7760	30-846	
03/09	0930	LAC	Chromium		11.83000	MG/KG			7130	30-846	
03/10	1200	LAC	Selenium	<	0.20000	MG/KG			7740	30-846	
03/09	1530	LAC	Copper		11.76300	MG/KG			7210	30-846	
03/09	0900	LAC	Zinc		38.84000	MG/KG			7070	30-846	
03/09	1500	LAC	Nickel		8.86200	MG/KG			7520	30-846	
03/09	1015	LAC	Beryllium		0.51300	MG/KG			7090	30-846	
03/09	0900	LAC	Thallium	<	10.00000	MG/KG			7340	30-846	
03/11	1130	LAC	Lead		37.70100	MG/KG			7420	30-846	
03/09	1430	LAC	Cadmium	<	0.50000	MG/KG			7130	30-846	
03/11	1630	LAC	Arsenic		6.22800	MG/KG			7050	30-846	
03/12	1330	LAC	Mercury T		0.0554	MG/KG			7471	30-846	
										Duplicates	% Spike
										1.51000	96.3 %
										21.64500	97.6 %
										40.90900	86.1 %
										1.56000	129.2 %
										35.76000	131.6 %
										2.56000	68.6 %
										1.55500	118.3 %
										1.00400	98.8 %
										28.05200	102.4 %
										38.69600	93.7 %
										1.00300	101.1 %
										34.58900	107.2 %
										23.23000	107.6 %

\* All data shown is from a different sample or standard on the same date.

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 A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes.  
 Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. (A) PLAN filed with ADPC&E.

Signature:  Environmental Services Co., Inc.  
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# Environmental Services Co., Inc.

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Phone: (501) 750-1170 Fax: 750-1172

Phone: (501) 372-9532 Fax: 372-9534

Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/25/94

Time Of Sample: 1140

Type Of Sample : SOIL

Sample Collected From: UDS 003 B4 INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : PED EX

Control Number: 9402010555

Work Order No.:

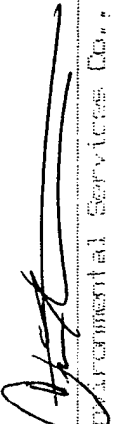
Purchase Order:

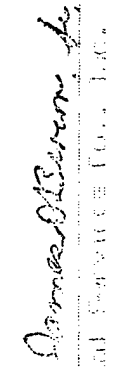
## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition	Quality Assurance	
											Duplicates	% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000	MG/KG	7041	7041	7041	SM-046	1.5100	1.4740 96.3 *
03/12	1600	LAC	Silver	<	0.7000	MG/KG	7760	7760	7760	SM-046	21.6450	19.5690 97.6 *
03/09	0930	LAC	Chromium	<	10.0000	MG/KG	7150	7150	7150	SM-046	40.9050	37.1940 86.1 *
03/10	1200	LAC	Selenium	<	0.2000	MG/KG	7740	7740	7740	SM-046	1.5000	1.4870 129.2 *
03/05	1530	LAC	Copper	<	10.8770	MG/KG	7210	7210	7210	SM-046	35.7400	30.5290 131.6 *
03/05	0900	LAC	Zinc	<	156.7730	MG/KG	7550	7550	7550	SM-046	2.5000	2.5000 100.0 *
03/09	1015	LAC	Nickel	<	8.8050	MG/KG	7520	7520	7520	SM-046	1.5550	1.5550 118.3 *
03/09	0900	LAC	Beryllium	<	0.9560	MG/KG	7090	7090	7090	SM-046	1.0040	1.0050 98.8 *
03/09	0900	LAC	Thallium	<	10.0000	MG/KG	7840	7840	7840	SM-046	28.0520	25.9800 102.4 *
03/11	1130	LAC	Lead	<	42.3510	MG/KG	7420	7420	7420	SM-046	33.8940	35.7450 80.7 *
03/03	1430	LAC	Cadmium	<	0.9960	MG/KG	7130	7130	7130	SM-046	1.0350	1.0430 101.1 *
03/11	1630	LAC	Arsenic	<	8.0980	MG/KG	7050	7050	7050	SM-046	34.5690	32.8130 107.2 *
03/12	1530	LAC	Mercury T	<	0.0368	MG/KG	7471	7471	7471	SM-046	28.2300	28.6100 107.6 *

\* QA data shown is from a different sample or standard on the same date.

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Memphis, TN 38134

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Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/25/94

Time of Sample: 1210

Type of Sample : SOIL

Sample Collected From: MND 001 B4 INT 1

Sample Collected by : EARL PARKER

Delivered To Lab by : FED EX

Control Number: 9402010556

Work Order No.:

Purchase Order:

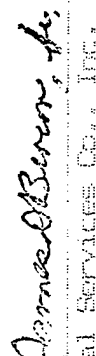
## Analysis

Analysis											Quality Assurance		
Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Duplicates	% Spike Recovery	
03/09	1200	LAC	Antimony	5.3150		MG/KG	7041		7041	SW-846	1.5100	1.4740	96.3 %
03/12	1600	LAC	Silver	< 0.70000		MG/KG	7760		7760	SW-846	21.6450	19.5690	97.6 %
03/09	0930	LAC	Chromium	10.9370		MG/KG	7150		7150	SW-846	40.9070	37.1940	86.1 %
03/09	1200	LAC	Selenium	< 0.20000		MG/KG	7740		7740	SW-846	1.1410	1.3790	112.7 %
03/09	1530	LAC	Copper	10.4010		MG/KG	7210		7210	SW-846	30.7600	30.5290	131.6 %
03/09	0800	LAC	Zinc	87.4560		MG/KG	7750		7750	SW-846	2.5560	2.5030	68.6 %
03/09	1500	LAC	Nickel	12.0570		MG/KG	7520		7520	SW-846	1.5560	1.5560	118.3 %
03/09	1015	LAC	Radium	0.5020		MG/KG	7090		7090	SW-846	15.1000	14.7820	71.0 %
03/09	0900	LAC	Thallium	< 10.00000		MG/KG	7940		7940	SW-846	22.8640	22.6390	91.1 %
03/12	1130	LAC	Lead	32.0920		MG/KG	7420		7420	SW-846	38.6960	35.7490	90.7 %
03/09	1430	LAC	Cadmium	< 0.50000		MG/KG	7130		7130	SW-846	1.0390	1.0430	101.1 %
03/11	1630	LAC	Arsenic	10.4360		MG/KG	7060		7060	SW-846	34.5090	32.8190	107.2 %
03/12	1330	LAC	Mercury T	0.0573		MG/KG	7471		7471	SW-846	28.2300	28.6100	107.6 %

All data shown is from a different sample or standard on the same date.

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# Environmental Services Co., Inc.

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Phone: (501) 372-5332 Fax: 372-5334

Date of Report: 03/15/94

Control Number: 9402010557

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Collected From: NAD 002 B4 INT 1

Sample Date: 02/25/94

Work Order No.:

Time Of Sample: 1225

Delivered To Lab By: PED EX

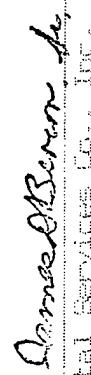
## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition	Quality Assurance	
											Duplicates	% Spike Recovery
03/09	1200	LAC	Antimony	<	3.00000	MB/KG	7041	MB/KG	7041	SW-846	1.0110	0.9950 92.7 *
03/12	1600	LAC	Silver	<	0.70000	MB/KG	7760	MB/KG	7760	SW-846	20.7470	19.8020 97.9 *
03/09	0930	LAC	Chromium	<	8.7210	MB/KG	7190	MB/KG	7190	SW-846	40.9750	39.4250 84.1 *
03/10	1300	LAC	Selenium	<	0.20000	MB/KG	7740	MB/KG	7740	SW-846	1.1410	1.3790 112.7 *
03/09	1530	LAC	Copper	<	6.33500	MB/KG	7210	MB/KG	7210	SW-846	3.4340	3.4520 121.7 *
03/09	0630	LAC	Zinc	<	30.4390	MB/KG	7950	MB/KG	7950	SW-846	601.1100	601.5870 122.0 *
03/09	1500	LAC	Nickel	<	8.1490	MB/KG	7520	MB/KG	7520	SW-846	1.5470	1.5520 98.8 *
03/09	1015	LAC	Beryllium	<	0.35300	MB/KG	7090	MB/KG	7090	SW-846	15.1040	14.7820 71.0 *
03/10	0900	LAC	Thallium	<	10.00000	MB/KG	7690	MB/KG	7690	SW-846	22.6390	22.6390 91.1 *
03/11	1130	LAC	Lead	<	20.2340	MB/KG	7420	MB/KG	7420	SW-846	83.0710	76.6510 99.6 *
03/03	1430	LAC	Cadmium	<	0.50000	MB/KG	7130	MB/KG	7130	SW-846	1.3070	1.3130 102.3 *
03/11	1630	LAC	Arsenic	<	6.9440	MB/KG	7060	MB/KG	7060	SW-846	33.0090	35.2790 112.3 *
03/12	1330	LAC	Mercury	<	0.0262	MB/KG	7471	MB/KG	7471	SW-846	24.5100	25.1500 96.0 *

\* All data shown is from a different sample or standard on the same date.

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Memphis, TN 38134

Phone: (901) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/25/94

Type Of Sample: 1250

Type Of Sample : SOIL

Sample Collected From: NMD 002 BH INT 2

Sample Collected By : EARL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010558

Work Order No.:

Purchase Order:

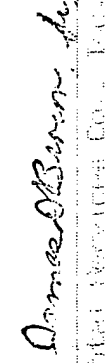
Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
											Duplicates	% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000	MG/KG	7041	7041	7041	SW-846	1.0110	0.9950
03/12	1400	LAC	Silver	<	0.7000	MG/KG	7740	7740	7740	SW-846	20.7470	19.8000
03/09	0900	LAC	Chromium		14.8710	MG/KG	7140	7140	7140	SW-846	40.9750	39.4250
03/10	1200	LAC	Selenium	<	0.2000	MG/KG	7740	7740	7740	SW-846	1.1410	1.3790
03/09	1500	LAC	Copper		23.5200	MG/KG	7210	7210	7210	SW-846	3.4340	3.4520
03/09	0600	LAC	Zinc		38.6360	MG/KG	7950	7950	7950	SW-846	636.1100	601.5870
03/09	0600	LAC	Nickel		9.6750	MG/KG	7520	7520	7520	SW-846	1.5470	1.5520
03/09	1015	LAC	Beryllium		0.5040	MG/KG	7650	7650	7650	SW-846	15.1040	14.7820
03/09	0900	LAC	Thallium	<	10.0000	MG/KG	7640	7640	7640	SW-846	22.8840	22.6390
03/11	1130	LAC	Lead		31.2790	MG/KG	7430	7430	7430	SW-846	65.6710	78.6510
03/09	1400	LAC	Cadmium	<	0.5000	MG/KG	7130	7130	7130	SW-846	1.3070	1.3130
03/11	1630	LAC	Arsenic		12.2190	MG/KG	7060	7060	7060	SW-846	33.0000	35.2930
03/12	1330	LAC	Mercury T		0.0920	MG/KG	7471	7471	7471	SW-846	24.5100	25.1500

The data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136, § minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, 14th Edition, 1992, published with APHA.

Signature 

Signature   
Environmental Services Co., Inc.



# Environmental Services Co., Inc.

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Phone: (501) 372-9332 Fax: 372-9334

Date of Report: 03/15/94

Customer Name: OPERATIONAL TECHNOLOGIES

Sample Date: 02/25/94

Time Of Sample: 1300

Type Of Sample :

Sample Collected From: NAD 0003 B4 INT 1

Sample Collected By : EARL PARKER

Delivered To Lab By : FED EX

Control Number: 9402010559

Work Order No.:


Purchase Order:

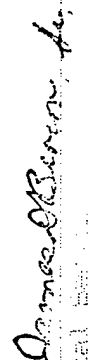
## Analysis

Date	Time	By	Parameter	Concentration	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
										Duplicates	% Spike Recovery
03/09	1200	LAC	Antimony	<	MG/KG	7041	9W-846	7041	9W-846	1.0110	0.9950 92.7 %
03/12	1400	LAC	Silver	<	MG/KG	7760	9W-846	7760	9W-846	20.7470	19.8020 97.9 %
03/24	0930	LAC	Chromium	11.5400	MG/KG	7190	9W-846	7190	9W-846	40.9750	39.4250 84.1 %
03/10	1200	LAC	Selenium	0.7040	MG/KG	7740	9W-846	7740	9W-846	1.1410	1.3750 112.7 %
03/03	1530	LAC	Copper	9.0100	MG/KG	7210	9W-846	7210	9W-846	3.4340	3.4530 121.7 %
03/14	0800	LAC	Zinc	36.4070	MG/KG	7950	9W-846	7950	9W-846	636.1100	601.5870 122.0 %
03/03	1500	LAC	Nickel	8.4790	MG/KG	7520	9W-846	7520	9W-846	1.5470	1.5520 98.8 %
03/09	1015	LAC	Beryllium	0.3610	MG/KG	7070	9W-846	7070	9W-846	15.1040	14.7820 71.0 %
03/09	0700	LAC	Thallium	10.0000	MG/KG	7340	9W-846	7340	9W-846	22.6390	22.6390 91.1 %
03/11	1130	LAC	Lead	29.9780	MG/KG	7420	9W-846	7420	9W-846	33.6710	70.6510 99.6 %
03/04	1450	LAC	Cadmium	0.5000	MG/KG	7130	9W-846	7130	9W-846	1.3070	1.3130 102.3 %
03/11	1630	LAC	Arsenic	12.4350	MG/KG	7000	9W-846	7000	9W-846	33.0030	35.2750 112.3 %
03/12	1530	LAC	Mercury T	0.0446	MG/KG	7471	9W-846	7471	9W-846	24.5100	25.1500 96.0 %

\* Lab data shown is from a different sample or standard on the same date.

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Wiley-Interscience, Inc., 605 Third Avenue, New York, New York 10158

LITTLE ROCK, PA / 2210  
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Phone: (501) 750-1170 Fax: 750-1172  
Phone: (501) 372-9332 Fax: 372-9334

Date of Report:	03/15/94	Type Of Sample	: SOIL	Control Number:	94020102560
Customer Name :	OPERATIONAL TECHNOLOGIES	Sample Collected From:	NMD 003 EH INT <i>12</i>	Work Order No.:	
Sample Date:	02/25/94	Sample Collected By :	EARL PARKER	Purchase Order:	
Line Of Sample:	1300	Delivered To Lab By :	FED EX		

Analysis	Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance		
												Duplicates	% Spike	Recovery
	03/09	1200	LAC	Antimony	< 3.0000		MG/KG	7041	7041		SW-846	1.0110	0.9950	92.7 %
	03/12	1600	LAC	Silver	< 0.7000		MG/KG	7760	7760		SW-846	20.7470	19.8020	97.9 %
	03/09	0930	LAC	Chromium	10.5100		MG/KG	7140	7140		SW-846	40.5750	39.4250	94.1 %
	03/10	1200	LAC	Selenium	0.4660		MG/KG	7740	7740		SW-846	1.1410	1.3790	112.7 %
	03/03	1530	LAC	Copper	5.4120		MG/KG	7210	7210		SW-846	3.4340	3.4520	121.7 %
	03/03	0600	LAC	Zinc	25.7650		MG/KG	7950	7950		SW-846	636.1160	601.5870	122.0 %
	03/08	1500	LAC	Nickel	8.7060		MG/KG	7530	7530		SW-846	1.5470	1.5520	98.8 %
	03/09	0610	LAC	Beryllium	0.3530		MG/KG	7010	7010		SW-846	15.1040	14.7820	71.0 %
	03/09	0700	LAC	Thallium	< 10.0000		MG/KG	7240	7240		SW-846	22.6340	22.6370	91.1 %
	03/11	1130	LAC	Lead	11.9960		MG/KG	7420	7420		SW-846	63.6710	78.6510	99.6 %
	03/06	1430	LAC	Cadmium	< 0.5000		MG/KG	7130	7130		SW-846	1.3070	1.3130	102.3 %
	03/11	1530	LAC	Arsenic	10.5370		MG/KG	7060	7060		SW-846	33.6060	35.2760	112.3 %
	03/12	1330	LAC	Mercury T	0.0070		MG/KG	7471	7471		SW-846	24.5100	25.1500	96.0 %

If the data stream is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% spiked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. G9 PLAN filed with ADFD&E.

*[Signature]*  
\_\_\_\_\_  
Signature  
Environmental Services Co., Inc.

*Dennis J. [illegible]*  
\_\_\_\_\_  
Signature  
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Phone: (501) 372-9532 Fax: 372-9534

Date of Report: 03/15/94

Type Of Sample : SUIL

Control Number: 9402010561

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Collected From: NMD 0034 EH INT 1

Sample Date: 02/25/94

Sample Collected By : EARL PARKER

Work Order No.:

Time Of Sample: 1410

Delivered To Lab By : PED EX

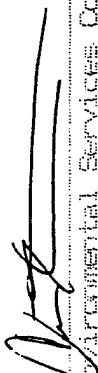
Purchase Order:

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
											Duplicates	% Spike Recovery
03/09	1400	LAC	Antimony	<	3.0000	MG/KG			7041	SM-846	1.0110	0.9950
03/12	1600	LAC	Silver	<	0.7000	MG/KG			7760	SM-846	20.7470	19.8020
03/09	0930	LAC	Chromium		5.7460	MG/KG			7190	SM-846	40.9750	39.4250
03/10	1200	LAC	Selenium		0.9780	MG/KG			7740	SM-846	1.1410	1.3790
03/08	1530	LAC	Copper		10.2370	MG/KG			7210	SM-846	3.4340	3.4520
03/08	0600	LAC	Zinc		16.8910	MG/KG			7950	SM-846	636.1100	601.5570
03/08	1530	LAC	Nickel		4.8000	MG/KG			7520	SM-846	1.5470	1.5520
03/09	1015	LAC	Beryllium		0.9050	MG/KG			7050	SM-846	15.1040	14.7820
03/09	0900	LAC	Thallium	<	10.0000	MG/KG			7840	SM-846	22.6340	22.6390
03/11	1130	LAC	Lead		12.0750	MG/KG			7420	SM-846	93.6070	78.6510
03/09	1430	LAC	Cadmium	<	0.5000	MG/KG			7130	SM-846	1.3070	1.3130
03/11	1630	LAC	Arsenic		13.4800	MG/KG			7060	SM-846	33.0260	35.2960
03/12	1330	LAC	Mercury T		0.2154	MG/KG			7471	SM-846	24.5100	25.1500

\* All data shown is from a different sample or standard on the same date.

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Signature  Environmental Services Co., Inc.

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# Environmental Services Co., Inc.

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Date of Report: 03/15/94

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Date: 02/25/94

Time Of Sample:

Type Of Sample : SOIL

Sample Collected From: CTS 004 SF

Sample Collected By : EARL PARKER

Delivered To Lab By : FED

Control Number: 9402010562

Work Order No.:

Purchase Order:

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
											Duplicates	% Soike Recovery
03/09	1200	LAC	Antimony	<	3.0000	MG/KG	7041	7041	SW-846	SW-846	1.0110	0.9950
03/12	1600	LAC	Silver	<	0.7000	MG/KG	7760	7760	SW-846	SW-846	20.7470	19.8020
03/09	0930	LAC	Chromium	<	20.6930	MG/KG	7190	7190	SW-846	SW-846	40.9750	39.4250
03/10	1200	LAC	Selenium	<	0.7000	MG/KG	7740	7740	SW-846	SW-846	1.1410	1.3790
03/08	1530	LAC	Copper	<	40.4560	MG/KG	7210	7210	SW-846	SW-846	3.4340	3.4520
03/08	0800	LAC	Zinc	<	601.5870	MG/KG	7950	7950	SW-846	SW-846	636.1100	601.5870
03/08	1500	LAC	Nickel	<	10.2010	MG/KG	7520	7520	SW-846	SW-846	1.5470	1.5520
03/09	1015	LAC	Beryllium	<	0.3290	MG/KG	7090	7090	SW-846	SW-846	15.1040	14.7820
03/09	0900	LAC	Thallium	<	10.0000	MG/KG	7840	7840	SW-846	SW-846	22.8840	22.6390
03/11	1130	LAC	Lead	<	54.8910	MG/KG	7420	7420	SW-846	SW-846	83.0710	78.6510
03/08	1430	LAC	Cadmium	<	5.1830	MG/KG	7130	7130	SW-846	SW-846	1.3070	1.3130
03/11	1630	LAC	Arsenic	<	9.7150	MG/KG	7060	7060	SW-846	SW-846	33.0080	35.2980
03/12	1330	LAC	Mercury	T	0.0641	MG/KG	7471	7471	SW-846	SW-846	24.5100	25.1500

\* QA data shown is from a different sample or standard on the same date.

All equipment used is checked and/or calibrated daily. All testing is conducted in accordance with 40 CFR Part 136. A minimum of 10% soaked and duplicate samples is run on each parameter where applicable for Quality Assurance purposes. Reference used: Standard Methods For Examination Of Water and Wastewater, unless noted above. QA PLAN filed with ADPC&E.

Signature

*[Signature]*

Environmental Services Co., Inc.

Signature

*[Signature]*

Environmental Services Co., Inc.



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Date of Report: 03/15/94

Type Of Sample : SOIL

Control Number: 9402010563

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Collected From: NMD 0006 SD

Sample Date: 02/25/94

Sample Collected By : EARL PARKER

Time Of Sample: 1555

Delivered To Lab By : FED EX

Work Order No.:

Purchase Order:

## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
											Duplicates	% Spike Recovery
03/09	1200	LAC	Antimony	<	3.0000	MG/KG			7061	SM-046	1.0110	0.9750
03/09	1400	LAC	Silver	<	0.7000	MG/KG			7760	SM-046	20.7470	19.8000
03/09	0730	LAC	Chromium		67.0000	MG/KG			7190	SM-046	40.9750	39.4250
03/10	1200	LAC	Selenium	<	0.2000	MG/KG			7740	SM-046	1.1410	1.3750
03/11	1530	LAC	Copper		23.4000	MG/KG			7210	SM-046	3.4540	3.4520
03/08	0800	LAC	Zinc		416.4000	MG/KG			7950	SM-046	636.1100	601.5870
03/08	1500	LAC	Nickel		11.3000	MG/KG			7520	SM-046	1.5470	1.5820
03/09	1015	LAC	Beryllium		0.4000	MG/KG			7090	SM-046	15.1040	14.7820
03/09	0900	LAC	Thallium	<	10.0000	MG/KG			7840	SM-046	22.6390	22.6390
03/11	1130	LAC	Lead		476.7000	MG/KG			7420	SM-046	53.0710	73.6510
03/08	1430	LAC	Cadmium		6.0400	MG/KG			7130	SM-046	1.3070	1.3130
03/11	1530	LAC	Arsenic		9.7650	MG/KG			7060	SM-046	33.0030	35.2960
03/12	1530	LAC	Mercury	T	0.0897	MG/KG			7471	SM-046	24.5100	25.1500

If data shown is from a different sample or standard on the same date.

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Date Of Report: 03/18/94

Type Of Sample : WATER

Control Number: 9402010572

Customer Name : OPERATIONAL TECHNOLOGIES

Sample Collected From: NWD 005 SW

Sample Date: 02/25/94

Sample Collected By : EARL PARKER

Work Order No.:

Time Of Sample: 1450

Delivered To Lab By : FED EX

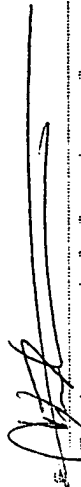
Purchase Order:

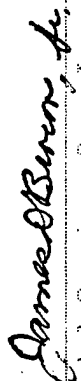
## Analysis

Date	Time	By	Parameter	Concentration	Notes	Units	Quantity	Units	Method	Edition or Ref.	Quality Assurance	
											Duplicates	% Spike Recovery
03/18	1500	LAC	Lead	0.1190		MG/L	239.1		239.1	EPA	1.1720	1.2370 105.8 %
03/08	1500	LAC	Nickel	< 0.0150		MG/L	249.1		249.1	EPA	1.0810	1.0810 106.0 %
03/02	1330	RFB	Selenium	< 0.0020		MG/L	270.2		270.2	EPA	0.5100	0.5050 101.5 %
03/09	0900	LAC	Thallium	0.1110		MG/L	279.1		279.1	EPA	0.8020	0.8330 74.5 %
03/08	0800	LAC	Total Zinc	0.1050		MG/L	289.1		289.1	EPA	1.0350	1.0290 101.8 %
03/09	1015	LAC	Beryllium	0.0070		MG/L	210.1		210.1	EPA	1.0440	1.0590 104.1 %
03/08	1430	LAC	Cadmium	0.0280		MG/L	213.1		213.1	EPA	1.0730	1.0770 106.2 %
03/09	0930	LAC	Chromium	0.0870		MG/L	218.1		218.1	EPA	1.0000	1.0100 97.6 %
03/09	1700	LAC	Copper, Tot	0.0171		MG/L	220.2		220.2	EPA	1.4000	1.2730 123.9 %
03/14	0900	LAC	Mercury T	0.0060		MG/L	245.1		245.1	EPA	0.0294	0.0319 105.6 %
03/09	1200	LAC	Antimony T	0.0300		MG/L	204.2		204.2	EPA	0.9710	1.1500 93.1 %
03/12	1600	LAC	Silver T	0.0220		MG/L	272.2		272.2	EPA	1.2290	1.2540 121.3 %
03/03	1330	RFB	Arsenic T	0.0020		MG/L	206.2		206.2	EPA	0.9670	0.9880 97.8 %

\* QA data shown is from a different sample or standard on the same date.

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Signature:  Environmental Services Co., Inc.

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# Environmental Services Company, Inc.

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010531  
Sample Type: GRAB SOIL  
Sample Location: NEF-005, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

m-, p-Xylenes

7.38

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $d_4$

126.40%

Toluene- $d_8$

104.71%

Bromofluorobenzene

89.69%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1040

Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





# Environmental Services Company, Inc.

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(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010532  
Sample Type: GRAB SOIL  
Sample Location: NEF-005, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

m-, p-Xylenes  
2-Butanone

7.85  
< 100.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

128.16%  
115.85%  
96.00%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1114  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_

James O'Brien, Jr.





# Environmental Services Company, Inc.

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Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010533  
Sample Type: GRAB SOIL  
Sample Location: CTS-003, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride	9.42
2-Butanone	< 100.00
m-, p-Xylenes	7.40

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $d_2$	129.05%
Toluene- $d_8$	98.55%
Bromofluorobenzene	83.28%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1148  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
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(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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LITTLE ROCK, ARKANSAS 72215  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010534  
Sample Type: GRAB SOIL  
Sample Location: CTS-003, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride  
m-, p-Xylenes

9.61  
7.25

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $d_4$   
Toluene- $d_8$   
Bromofluorobenzene

111.89%  
88.52%  
82.01%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1222  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010535  
Sample Type: GRAB SOIL  
Sample Location: CTS-002, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone  
2-Hexanone

392.91  
< 50.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

115.98%  
85.35%  
86.28%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1255  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010536  
Sample Type: GRAB SOIL  
Sample Location: CTS-002, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone	122.46
m-, p-Xylenes	10.85
o-Xylene	5.32

## QUALITY ASSURANCE RESULTS

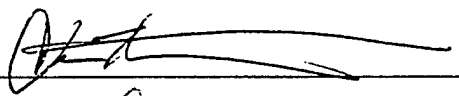
### System Monitoring Compounds

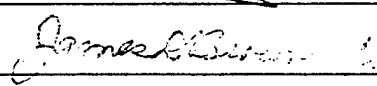
### % Recovery

1,2 - Dichloroethane- $\text{d}_4$	107.78%
Toluene- $\text{d}_8$	104.24%
Bromofluorobenzene	78.37%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1329  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010537  
Sample Type: GRAB SOIL  
Sample Location: CTS-001, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

9.40

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

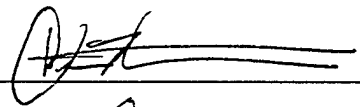
### % Recovery

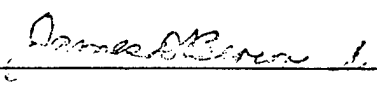
1,2 - Dichloroethane- $d_2$   
Toluene- $d_8$   
Bromofluorobenzene

120.47%  
103.00%  
82.93%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1403  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010538  
Sample Type: GRAB SOIL  
Sample Location: NEF-004, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

17.02

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$

126.15%

Toluene- $\text{d}_8$

102.64%

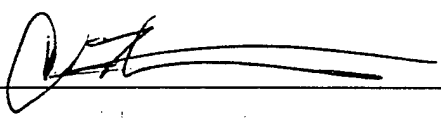
Bromofluorobenzene

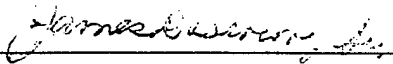
81.51%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1449

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010539  
Sample Type: GRAB SOIL  
Sample Location: NEF-003, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone

299.35

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

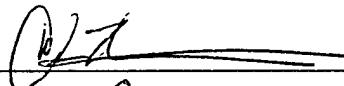
### % Recovery

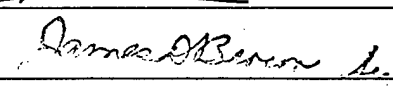
1,2 - Dichloroethane- $\text{d}_2$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

123.33%  
102.21%  
86.23%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1523  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010540  
Sample Type: GRAB SOIL  
Sample Location: NEF-003, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone

< 100.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

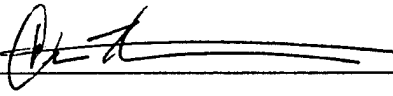
### % Recovery

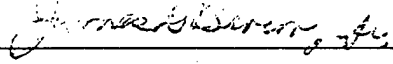
1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

122.30%  
92.47%  
78.47%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1556  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010541  
Sample Type: GRAB SOIL  
Sample Location: NEF-002, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

15.69

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $d_4$

122.26%

Toluene- $d_8$

91.47%

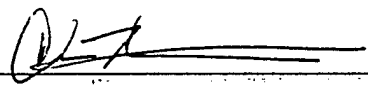
Bromofluorobenzene

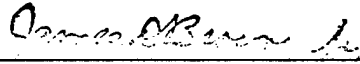
81.44%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1630

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010542  
Sample Type: GRAB SOIL  
Sample Location: NEF-002, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

Results  $\mu\text{g kg}^{-1}$  (ppb)

No VOC Target Analytes detected.

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

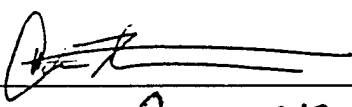
### % Recovery

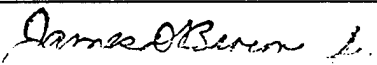
1,2 - Dichloroethane- $d_4$   
Toluene- $d_8$   
Bromofluorobenzene

117.50%  
105.37%  
79.62%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1704  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
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FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010543  
Sample Type: GRAB SOIL  
Sample Location: NEF-001, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results ug kg<sup>-1</sup> (ppb)

Methylene Chloride

15.42

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane-d<sub>4</sub>

118.55%

Toluene-d<sub>8</sub>

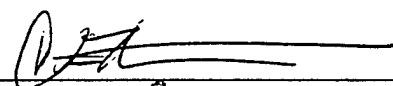
99.19%

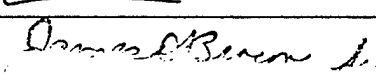
Bromofluorobenzene

83.49%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1737  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
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FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010544  
Sample Type: GRAB SOIL  
Sample Location: NEF-001, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

15.77

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$

112.29%

Toluene- $\text{d}_8$

98.85%

Bromofluorobenzene

82.42%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1811  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010551  
Sample Type: GRAB SOIL  
Sample Location: ODS-004 BH, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

17.53

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

102.18%  
112.47%  
82.40%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2139  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010552  
Sample Type: GRAB SOIL  
Sample Location: ODS-002 BH, INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

17.80

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

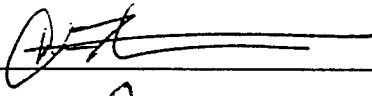
### % Recovery

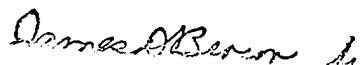
1,2 - Dichloroethane- $d_4$   
Toluene- $d_8$   
Bromofluorobenzene

98.76%  
121.37%  
83.06%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2212  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
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FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010553  
Sample Type: GRAB SOIL  
Sample Location: ODS-001 BH, INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

16.04

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$

111.55%

Toluene- $\text{d}_8$

102.36%

Bromofluorobenzene

103.23%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2246

Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010554  
Sample Type: GRAB SOIL  
Sample Location: ODS-001 BH, INT 2

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

17.56

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $d_2$   
Toluene- $d_8$   
Bromofluorobenzene

115.69%  
119.79%  
85.18%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2319  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010555  
Sample Type: GRAB SOIL  
Sample Location: ODS-003 BH, INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 02-28-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

17.09

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $d_2$   
Toluene- $d_8$   
Bromofluorobenzene

117.30%  
116.99%  
77.56%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 2353  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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(501) 750-1170 - FAX NO. (501) 750-1172

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010556  
Sample Type: GRAB SOIL  
Sample Location: NWD-001 BH, INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone  
Methylene Chloride

341.50  
16.84

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

109.58%  
105.06%  
86.00%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 0026  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010557  
Sample Type: GRAB SOIL  
Sample Location: NWD-002 BH, INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

16.41

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$

124.82%

Toluene- $\text{d}_8$

109.57%

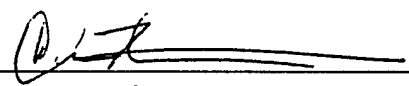
Bromofluorobenzene

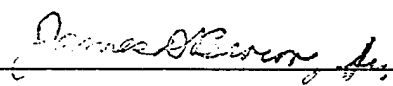
87.69%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 0100

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010558  
Sample Type: GRAB SOIL  
Sample Location: NWD-002 BH, INT 2

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

17.79

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$

107.12%

Toluene- $\text{d}_8$

109.19%

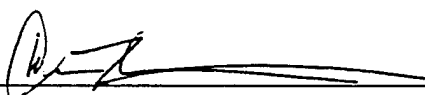
Bromofluorobenzene

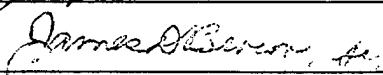
82.71%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 0133

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010559  
Sample Type: GRAB SOIL  
Sample Location: NWD-003 BH, INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone

< 100.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

108.83%  
111.29%  
95.84%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1230  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010560  
Sample Type: GRAB SOIL  
Sample Location: NWD-003 BH, INT 2

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone

< 100.00

Methylene Chloride

18.23

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$

113.52%

Toluene- $\text{d}_8$

102.42%

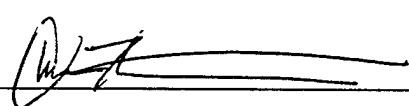
Bromofluorobenzene

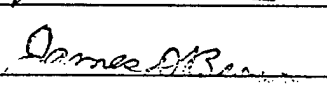
83.16%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1303

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010561  
Sample Type: GRAB SOIL  
Sample Location: NWD-004 BH, INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

19.33

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

116.55%  
109.97%  
78.03%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1337  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010562  
Sample Type: GRAB SOIL  
Sample Location: CTS-004 SF

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Acetone

< 100.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

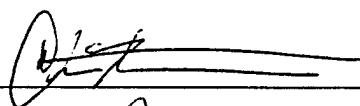
### % Recovery

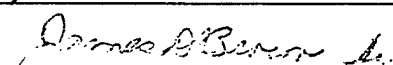
1,2 - Dichloroethane- $\text{d}_4$   
Toluene- $\text{d}_8$   
Bromofluorobenzene

99.91%  
110.23%  
80.71%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1411  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010563  
Sample Type: GRAB SOIL  
Sample Location: NWD-006 SD

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

### VOC Target Compounds

### Results $\mu\text{g kg}^{-1}$ (ppb)

Methylene Chloride

18.14

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

1,2 - Dichloroethane- $\text{d}_4$

116.31%

Toluene- $\text{d}_8$

100.31%

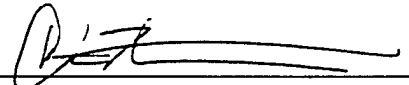
Bromofluorobenzene

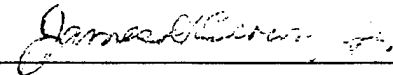
86.88%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Method 8270A.

Time of Analysis: 1445

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010572  
Sample Type: GRAB WATER  
Sample Location: NWD-005 SW

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-01-94  
Date Reported: 03-02-94

## ANALYTICAL RESULTS

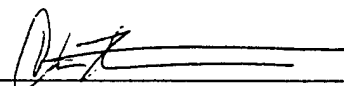
<u>VOC Target Compounds</u>	<u>Results <math>\mu\text{g kg}^{-1}</math> (ppb)</u>
Acetone	< 100.00
Methylene Chloride	224.39
Chloroform	12.75
Trichloroethene	8.49
Toluene	5.26

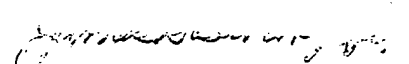
## QUALITY ASSURANCE RESULTS

<u>System Monitoring Compounds</u>	<u>% Recovery</u>
1,2 - Dichloroethane- $\text{d}_4$	101.25%
Toluene- $\text{d}_8$	100.33%
Bromofluorobenzene	86.80%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA Method 624.

Time of Analysis: 1632  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010531  
Sample Type: Soil  
Sample Location: NEF-005 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-04-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{kg}^{-1}$ (ppb)

Bis (2-ethylhexyl) phthalate

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol	122.43
Phenol- $\text{d}_5$	137.66
Nitrobenzene- $\text{d}_5$	91.79
2-Fluorobiphenyl	62.45
2,4,6-Tribromophenol	65.57
p-Terphenyl- $\text{d}_{14}$	116.80

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1804  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010532  
Sample Type: Soil  
Sample Location: NEF-005 INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-04-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS


### System Monitoring Compounds


### % Recovery

2-Fluorophenol	132.13
Phenol- $\text{d}_5$	133.11
Nitrobenzene- $\text{d}_5$	111.91
2-Fluorobiphenyl	61.13
2,4,6-Tribromophenol	89.88
p-Terphenyl- $\text{d}_{14}$	114.73

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1903  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010533  
Sample Type: Soil  
Sample Location: CTS-003 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-04-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Bis (2-ethylhexyl) phthalate

667.93

Pyrene

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

83.95

Phenol- $\text{d}_5$

82.17

Nitrobenzene- $\text{d}_5$

90.39

2-Fluorobiphenyl

79.57

2,4,6-Tribromophenol

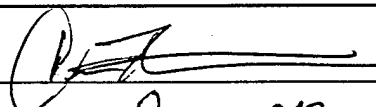
31.84

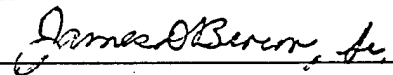
p-Terphenyl- $\text{d}_{14}$

182.05

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2001  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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MEMPHIS, TN 38134  
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FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010534  
Sample Type: Soil  
Sample Location: CTS-003 INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-04-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Bis (2-ethylhexyl) phthalate

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

106.28

Phenol- $\text{d}_5$

99.66

Nitrobenzene- $\text{d}_5$

92.22

2-Fluorobiphenyl

73.81

2,4,6-Tribromophenol

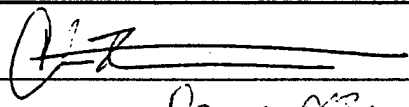
43.21

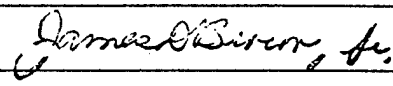
p-Terphenyl- $\text{d}_{14}$

179.50

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2059  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010535  
Sample Type: Soil  
Sample Location: CTS-002 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-04-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Pyrene

< 660.00

## QUALITY ASSURANCE RESULTS

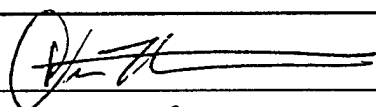
### System Monitoring Compounds

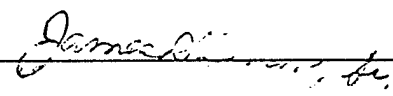
### % Recovery

2-Fluorophenol	83.04
Phenol-d <sub>5</sub>	78.60
Nitrobenzene-d <sub>5</sub>	75.48
2-Fluorobiphenyl	64.08
2,4,6-Tribromophenol	32.69
p-Terphenyl-d <sub>14</sub>	141.61

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2157  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010536  
Sample Type: Soil  
Sample Location: CTS-002 INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Bis (2-ethylhexyl) phthalate

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol	43.96
Phenol- $\text{d}_5$	51.47
Nitrobenzene- $\text{d}_5$	85.03
2-Fluorobiphenyl	70.37
2,4,6-Tribromophenol	11.37
p-Terphenyl- $\text{d}_{14}$	125.61

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1945  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010537  
Sample Type: Soil  
Sample Location: CTS-001 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{kg}^{-1}$ (ppb)

Bis (2-ethylhexyl) phthalate

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

48.39

Phenol- $\text{d}_5$

59.95

Nitrobenzene- $\text{d}_5$

87.76

2-Fluorobiphenyl

68.01

2,4,6-Tribromophenol

9.66

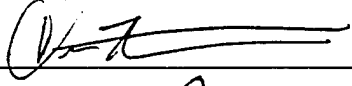
p-Terphenyl- $\text{d}_{14}$

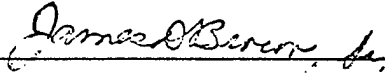
146.81

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2043

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010538  
Sample Type: Soil  
Sample Location: NEF-004 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{kg}^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

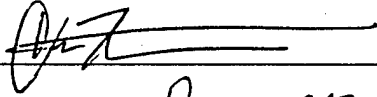
### System Monitoring Compounds

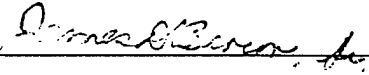
### % Recovery

2-Fluorophenol	50.50
Phenol- $\text{d}_5$	42.28
Nitrobenzene- $\text{d}_5$	71.50
2-Fluorobiphenyl	58.39
2,4,6-Tribromophenol	9.62
p-Terphenyl- $\text{d}_{14}$	146.43

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1241  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

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(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010539  
Sample Type: Soil  
Sample Location: NEF-003 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Butylbenzyl phthalate

< 660.00

Bis (2-ethylhexyl) phthalate

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

86.65

Phenol- $\text{d}_5$

87.52

Nitrobenzene- $\text{d}_5$

94.03

2-Fluorobiphenyl

73.90

2,4,6-Tribromophenol

21.64

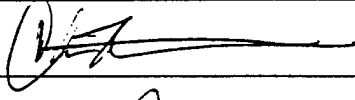
p-Terphenyl- $\text{d}_{14}$

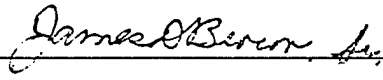
171.63

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2239

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010540  
Sample Type: Soil  
Sample Location: NEF-003 INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

Results  $\mu\text{gkg}^{-1}$  (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol	96.30
Phenol- $\text{d}_5$	150.87
Nitrobenzene- $\text{d}_5$	162.02
2-Fluorobiphenyl	81.77
2,4,6-Tribromophenol	110.03
p-Terphenyl- $\text{d}_{14}$	134.41

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2337  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





# Environmental Services Company, Inc.

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CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010541  
Sample Type: Soil  
Sample Location: NEF-002 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Pyrene

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

122.49%

Phenol- $\text{d}_5$

103.51%

Nitrobenzene- $\text{d}_5$

149.15%

2-Fluorobiphenyl

75.95%

2,4,6-Tribromophenol

76.00%

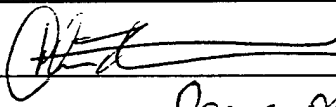
p-Terphenyl- $\text{d}_{14}$

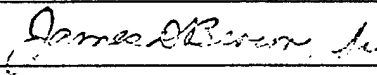
139.25%

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0035

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010542  
Sample Type: Soil  
Sample Location: NEF-002 INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

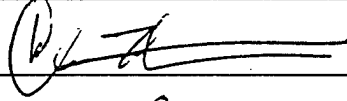
### System Monitoring Compounds

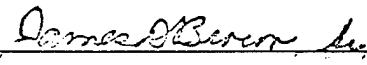
### % Recovery

2-Fluorophenol	76.79
Phenol- $\text{d}_5$	92.69
Nitrobenzene- $\text{d}_5$	65.68
2-Fluorobiphenyl	38.17
2,4,6-Tribromophenol	29.91
p-Terphenyl- $\text{d}_{14}$	92.55

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1837  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010543  
Sample Type: Soil  
Sample Location: NEF-001 INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

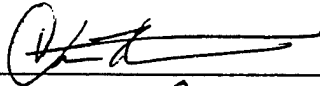
### System Monitoring Compounds

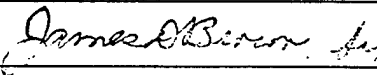
### % Recovery

2-Fluorophenol	
Phenol- $\text{d}_5$	
Nitrobenzene- $\text{d}_5$	41.76
2-Fluorobiphenyl	35.86
2,4,6-Tribromophenol	
p-Terphenyl- $\text{d}_{14}$	98.83

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0133  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

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LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies

Control Number: 9402010544

Sample Type: Soil

Sample Location: NEF-002 INT 2  
(sleeve marked "001")

Date Sampled: 02-24-94

Date Received: 02-25-94

Date of Analysis: 03-07-94

Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

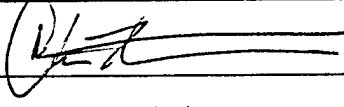
### % Recovery

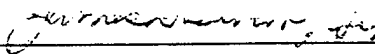
2-Fluorophenol	83.95
Phenol- $\text{d}_5$	75.14
Nitrobenzene- $\text{d}_5$	88.64
2-Fluorobiphenyl	68.36
2,4,6-Tribromophenol	31.82
p-Terphenyl- $\text{d}_{14}$	165.30

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0231

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

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(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010551  
Sample Type: Soil  
Sample Location: ODS-004 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Bis (2-ethylhexyl) phthalate

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

89.00

Phenol- $\text{d}_5$

104.42

Nitrobenzene- $\text{d}_5$

96.54

2-Fluorobiphenyl

62.92

2,4,6-Tribromophenol

41.47

p-Terphenyl- $\text{d}_{14}$

114.92

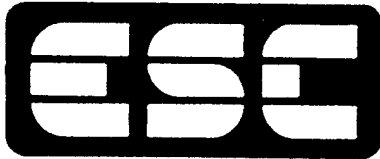
The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1934  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010552  
Sample Type: Soil  
Sample Location: ODS-002 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-08-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

Results  $\mu\text{gkg}^{-1}$  (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol	98.92
Phenol- $\text{d}_5$	101.15
Nitrobenzene- $\text{d}_5$	99.03
2-Fluorobiphenyl	78.11
2,4,6-Tribromophenol	25.82
p-Terphenyl- $\text{d}_{14}$	127.28

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1943  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010553  
Sample Type: Soil  
Sample Location: ODS-001 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-08-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

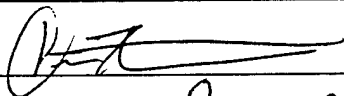
<u>Semi-Volatile Target Compounds</u>	<u>Results <math>\mu\text{gkg}^{-1}</math> (ppb)</u>
Acenaphthene	< 660.00
Phenanthrene	2229.82
Anthracene	< 660.00
Fluoranthene	4029.46
Pyrene	6411.72
Benzo(a)anthracene	1735.02
Chrysene	2711.77
Bis (2-ethylhexyl) phthalate	1266.64
Benzo(b)fluoranthene	1266.28
Benzo(k)fluoranthene	1084.57
Benzo(a)pyrene	1094.21
Indeno(1,2,3-c,d)pyrene	797.54
Benzo(g,h,i)perylene	1037.09


## QUALITY ASSURANCE RESULTS

<u>System Monitoring Compounds</u>	<u>% Recovery</u>
2-Fluorophenol	75.16
Phenol- $\text{d}_5$	82.04
Nitrobenzene- $\text{d}_5$	80.32
2-Fluorobiphenyl	57.04
2,4,6-Tribromophenol	49.63
p-Terphenyl- $\text{d}_{14}$	116.48

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2040  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010554  
Sample Type: Soil  
Sample Location: ODS-001 BH INT 2

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-08-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Butylbenzyl phthalate

< 660.00

Bis (2-ethylhexyl) phthalate

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

91.15

Phenol- $\text{d}_5$

92.85

Nitrobenzene- $\text{d}_5$

92.40

2-Fluorobiphenyl

71.89

2,4,6-Tribromophenol

56.68

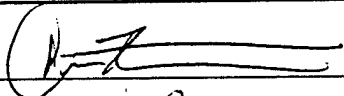
p-Terphenyl- $\text{d}_{14}$

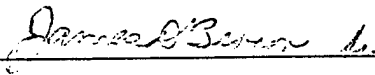
138.30

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2138

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010555  
Sample Type: Soil  
Sample Location: ODS-003 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-08-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

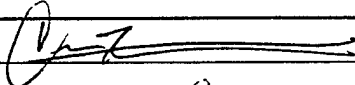
<u>Semi-Volatile Target Compounds</u>	<u>Results <math>\mu\text{gkg}^{-1}</math> (ppb)</u>
Bis (2-ethylhexyl) phthalate	< 660.00
Pyrene	11182.02
Fluoranthene	7725.69
Phenanthrene	4649.25
Benzo(a)anthracene	3223.47
Chrysene	5126.32
Benzo(b)fluoranthene	1982.48
Acenaphthene	< 660.00
Anthracene	1070.88
Benzo(k)fluoranthene	1621.02
Fluorene	< 660.00
Benzo(a)pyrene	1754.39
Indeno(1,2,3-c,d)pyrene	1010.57
Benzo(g,h,i)perylene	1381.32

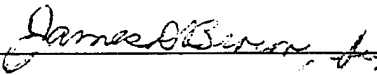
## QUALITY ASSURANCE RESULTS

<u>System Monitoring Compounds</u>	<u>% Recovery</u>
2-Fluorophenol	98.92
Phenol-d <sub>5</sub>	100.30
Nitrobenzene-d <sub>5</sub>	102.45
2-Fluorobiphenyl	81.68
2,4,6-Tribromophenol	56.41
p-Terphenyl-d <sub>14</sub>	149.25

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2235  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010556  
Sample Type: Soil  
Sample Location: NWD-001 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-08-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Phenanthrene	< 660.00
Flouranthene	< 660.00
Pyrene	1055.08
Benzo(a)anthracene	< 660.00
Chrysene	< 660.00
Bis (2-ethylhexyl) phthalate	< 660.00
Benzo(b)fluoranthene	< 660.00

## QUALITY ASSURANCE RESULTS

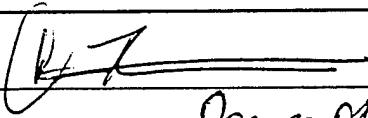
### System Monitoring Compounds

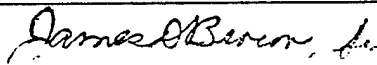
### % Recovery

2-Fluorophenol	102.51
Phenol- $\text{d}_5$	105.22
Nitrobenzene- $\text{d}_5$	89.23
2-Fluorobiphenyl	71.33
2,4,6-Tribromophenol	54.71
p-Terphenyl- $\text{d}_{14}$	136.67

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2333  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010557  
Sample Type: Soil  
Sample Location: NWD-002 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-08-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Phenanthrene	< 660.00
Fluoranthene	< 660.00
Pyrene	966.66
Benzo(a)anthracene	< 660.00
Chrysene	< 660.00
Bis (2-ethylhexyl) phthalate	< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol	97.70
Phenol- $\text{d}_5$	93.77
Nitrobenzene- $\text{d}_5$	90.13
2-Fluorobiphenyl	70.99
2,4,6-Tribromophenol	47.28
p-Terphenyl- $\text{d}_{14}$	138.02

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0030  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010558  
Sample Type: Soil  
Sample Location: NWD-002 BH INT 2

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

Results  $\mu\text{gkg}^{-1}$  (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol	107.08
Phenol- $\text{d}_5$	110.58
Nitrobenzene- $\text{d}_5$	109.37
2-Fluorobiphenyl	76.76
2,4,6-Tribromophenol	100.78
p-Terphenyl- $\text{d}_{14}$	158.28

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2031  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010559  
Sample Type: Soil  
Sample Location: NWD-003 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

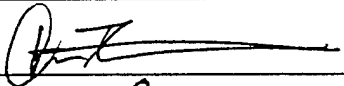
<u>Semi-Volatile Target Compounds</u>	<u>Results <math>\mu\text{gkg}^{-1}</math> (ppb)</u>
Fluoranthene	< 660.00
Pyrene	< 660.00

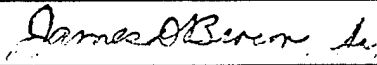
## QUALITY ASSURANCE RESULTS

<u>System Monitoring Compounds</u>	<u>% Recovery</u>
2-Fluorophenol	104.02
Phenol- $\text{d}_5$	106.14
Nitrobenzene- $\text{d}_5$	114.37
2-Fluorobiphenyl	77.74
2,4,6-Tribromophenol	105.42
p-Terphenyl- $\text{d}_{14}$	163.57

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2139  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010560  
Sample Type: Soil  
Sample Location: NWD-003 BH INT 2

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

Results  $\mu\text{gkg}^{-1}$  (ppb)

No Semi-volatile Target Compounds detected.

## QUALITY ASSURANCE RESULTS

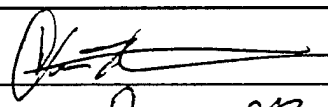
### System Monitoring Compounds

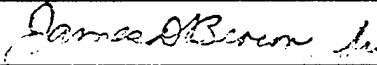
### % Recovery

2-Fluorophenol	98.88
Phenol- $\text{d}_5$	106.69
Nitrobenzene- $\text{d}_5$	91.34
2-Fluorobiphenyl	61.32
2,4,6-Tribromophenol	65.44
p-Terphenyl- $\text{d}_{14}$	144.20

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2226  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010561  
Sample Type: Soil  
Sample Location: NWD-004 BH INT 1

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Pyrene

< 660.00

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

106.00

Phenol- $\text{d}_5$

105.01

Nitrobenzene- $\text{d}_5$

97.89

2-Fluorobiphenyl

82.19

2,4,6-Tribromophenol

94.68

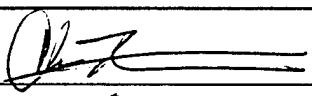
p-Terphenyl- $\text{d}_{14}$

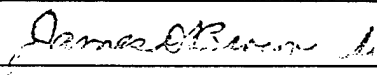
168.36

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 2324

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010562  
Sample Type: Soil  
Sample Location: CTS-004 SF

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-10-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

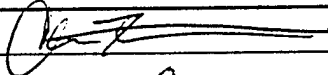
<u>Semi-Volatile Target Compounds</u>	<u>Results <math>\mu\text{gkg}^{-1}</math> (ppb)</u>
Bis (2-ethylhexyl) phthalate	2308.51
Pyrene	114371.61
Fluoranthene	75269.06
Phenanthrene	65689.27
Benzo(a)anthracene	26676.08
Chrysene	37808.93
Benzo(b)fluoranthene	15830.59
Acenaphthene	5651.72
Anthracene	20106.44
Benzo(k)fluoranthene	11433.92
Fluorene	5459.81
Benzo(a)pyrene	14026.74
Indeno(1,2,3-c,d)pyrene	7684.55
Benzo(g,h,i)perylene	9523.44
Naphthalene	2681.25
2-Methylnaphthalene	1034.18
Dibenzofuran	2362.84

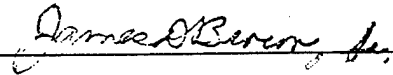
## QUALITY ASSURANCE RESULTS

<u>System Monitoring Compounds</u>	<u>% Recovery</u>
2-Fluorophenol	93.53
Phenol-d <sub>5</sub>	103.22
Nitrobenzene-d <sub>5</sub>	99.80
2-Fluorobiphenyl	71.99
2,4,6-Tribromophenol	64.04
p-Terphenyl-d <sub>14</sub>	162.40

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 0021  
Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010563  
Sample Type: Soil  
Sample Location: NWD-006 SD

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-10-94  
Date Reported: 03-10-94

## ANALYTICAL RESULTS

<u>Semi-Volatile Target Compounds</u>	<u>Results <math>\mu\text{gkg}^{-1}</math> (ppb)</u>
Bis (2-ethylhexyl) phthalate	2916.73
Pyrene	84561.55
Fluoranthene	59393.35
Phenanthrene	50467.88
Benzo(a)anthracene	18938.94
Chrysene	29882.09
Benzo(b)fluoranthene	14886.15
Acenaphthene	2024.26
Anthracene	50122.49
Benzo(k)fluoranthene	11080.74
Fluorene	2686.78
Benzo(a)pyrene	13424.02
Indeno(1,2,3-c,d)pyrene	9180.39
Benzo(g,h,i)perylene	11321.52
Naphthalene	< 660.00
2-Methylnaphthalene	< 660.00
Dibenzofuran	1441.40
Dibenzo(a,h)anthracene	4426.92

## QUALITY ASSURANCE RESULTS

<u>System Monitoring Compounds</u>	<u>% Recovery</u>
2-Fluorophenol	102.32
Phenol- $\text{d}_5$	110.11
Nitrobenzene- $\text{d}_5$	94.12
2-Fluorobiphenyl	68.69
2,4,6-Tribromophenol	95.94
p-Terphenyl- $\text{d}_{14}$	132.18

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.  
Time of Analysis: 0119  
Chemist: HJV

Data release authorized by: \_\_\_\_\_

Data release authorized by: \_\_\_\_\_





# Environmental Services Company, Inc.

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: Operational Technologies  
Control Number: 9402010572  
Sample Type: Water  
Sample Location: NWD-005 SW

Date Sampled: 02-25-94  
Date Received: 02-25-94  
Date of Analysis: 03-14-94  
Date Reported: 03-14-94

## ANALYTICAL RESULTS

### Semi-Volatile Target Compounds

### Results $\mu\text{gkg}^{-1}$ (ppb)

Bis (2-ethylhexyl) phthalate

1553.96

## QUALITY ASSURANCE RESULTS

### System Monitoring Compounds

### % Recovery

2-Fluorophenol

84.19

Phenol- $\text{d}_5$

62.54

Nitrobenzene- $\text{d}_5$

93.48

2-Fluorobiphenyl

70.57

2,4,6-Tribromophenol

72.02

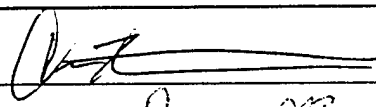
p-Terphenyl- $\text{d}_{14}$

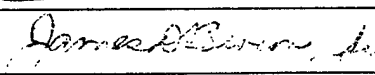
164.02

The lab blank was monitored for all analytes of interest.  
The analysis was run per EPA SW-846 Methods 3550 and 8270.

Time of Analysis: 1508

Chemist: HJV

Data release authorized by: 

Data release authorized by: 





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

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(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010531  
Sample Type: GRAB SOIL  
Sample Location: NEF-005, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.00

## QUALITY ASSURANCE RESULTS

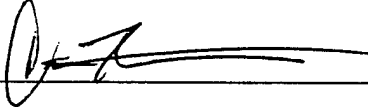
	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

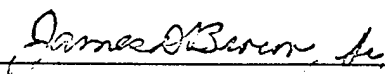
The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 09:06  
Chemist: HJV

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010532  
Sample Type: GRAB SOIL  
Sample Location: NEF-005, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	<10.00

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 10:14	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_

*James E. Burton, Jr.*





# Environmental Services Company, Inc.

1107 CENTURY  
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(501) 750-1170 - FAX NO. (501) 750-1172

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010533  
Sample Type: GRAB SOIL  
Sample Location: CTS-003, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	21.25

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 10:45  
Chemist: HJV

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





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SPRINGDALE ARKANSAS 72764  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010534  
Sample Type: GRAB SOIL  
Sample Location: CTS-003, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	11.62

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 12:37	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_

*James A. Burton, Jr.*





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010535  
Sample Type: GRAB SOIL  
Sample Location: CTS-002, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 13:27	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010536  
Sample Type: GRAB SOIL  
Sample Location: CTS-002, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 13:59	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010537  
Sample Type: GRAB SOIL  
Sample Location: CTS-001, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

### % RECOVERY

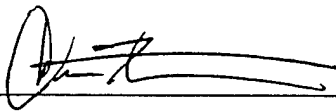
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

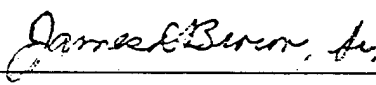
The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:27  
Chemist: HJV

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010538  
Sample Type: GRAB SOIL  
Sample Location: NEF-004, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 15:05  
Chemist: HJV

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





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CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010539  
Sample Type: GRAB SOIL  
Sample Location: NEF-003, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

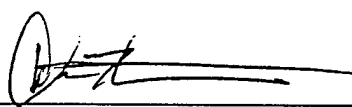
	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %

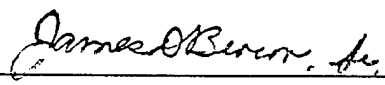
The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 15:35  
Chemist: HJV

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010540  
Sample Type: GRAB SOIL  
Sample Location: NEF-003, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-03-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	86.62 %
(Duplicate)	96.03 %
RPD	0.10 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 16:00	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

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SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010541  
Sample Type: GRAB SOIL  
Sample Location: NEF-002, INT 1

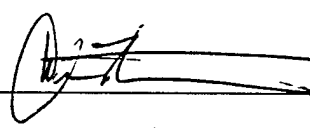
Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

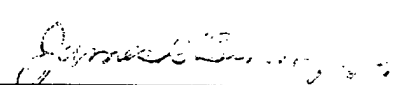
## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 07:21	
Chemist: HJV	

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010542  
Sample Type: GRAB SOIL  
Sample Location: NEF-002, INT 2

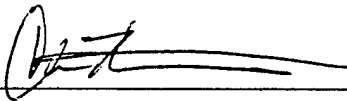
Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

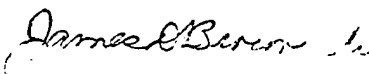
## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 09:32	
Chemist: HJV	

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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LITTLE ROCK, ARKANSAS 72215  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010543  
Sample Type: GRAB SOIL  
Sample Location: NEF-001, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 10:03	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010544  
Sample Type: GRAB SOIL  
Sample Location: NEF-001, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

### % RECOVERY

Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 10:35  
Chemist: HJV

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010551  
Sample Type: GRAB SOIL  
Sample Location: ODS-004, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 11:13	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
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(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010552  
Sample Type: GRAB SOIL  
Sample Location: ODS-002, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 12:17  
Chemist: HJV

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
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1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010553  
Sample Type: GRAB SOIL  
Sample Location: ODS-001, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 12:46	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010554  
Sample Type: GRAB SOIL  
Sample Location: ODS-001, BH, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 13:21	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010555  
Sample Type: GRAB SOIL  
Sample Location: ODS-003, BH, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 12:18  
Chemist: HJV

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010555  
Sample Type: GRAB SOIL  
Sample Location: ODS-003, BH, INT 1

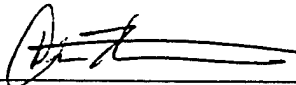
Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-15-94

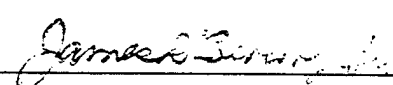
## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 12:18	
Chemist: HJV	

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010556  
Sample Type: GRAB SOIL  
Sample Location: NWD-001, BH, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

### % RECOVERY

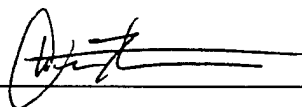
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %

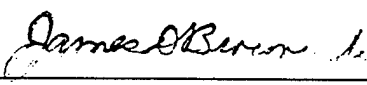
The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 13:50  
Chemist: HJV

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010557  
Sample Type: GRAB SOIL  
Sample Location: NWD-002, BH, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 13:02	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010558  
Sample Type: GRAB SOIL  
Sample Location: NWD-002, BH, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 14:42	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010559  
Sample Type: GRAB SOIL  
Sample Location: NWD-003, BH, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

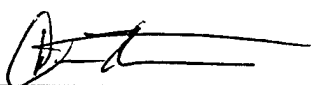
	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

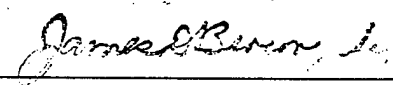
The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 14:53  
Chemist: HJV

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010560  
Sample Type: GRAB SOIL  
Sample Location: NWD-003, BH, INT 2

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

### % RECOVERY

Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

The analysis was run per Modified EPA Method 8015.

Time of analysis: 15:28  
Chemist: HJV

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010561  
Sample Type: GRAB SOIL  
Sample Location: NWD-004, BH, INT 1

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 16:24	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010562  
Sample Type: GRAB SOIL  
Sample Location: CTS-004 SF

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 14:50	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010563  
Sample Type: GRAB SOIL  
Sample Location: NWD-006 SD

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-09-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS mgKg<sup>-1</sup> (ppm)</u>
Total Petroleum Hydrocarbons	< 10.0

## QUALITY ASSURANCE RESULTS

	<u>% RECOVERY</u>
Matrix Spike (300 µl)	63.49 %
(Duplicate)	85.15 %
RPD	0.29 %
The laboratory blank was monitored for all analytes of interest.	
This analysis was performed for Diesel constituents only.	
The analysis was run per Modified EPA Method 8015.	
Time of analysis: 15:18	
Chemist: HJV	

Data Release Authorized By: \_\_\_\_\_

Data Release Authorized By: \_\_\_\_\_





# Environmental Services Company, Inc.

1107 CENTURY  
SPRINGDALE ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

CORPORATE OFFICE:  
13715 W. MARKHAM - P.O. BOX 5644  
LITTLE ROCK, ARKANSAS 72215  
(501) 221-2565 - FAX NO. (501) 221-1341

1704 SHELBY OAKS DRIVE NORTH  
MEMPHIS, TN 38134  
(901) 372-9332  
FAX (901) 372-9334

Customer: OPERATIONAL TECHNOLOGIES  
Control Number: 9402010572  
Sample Type: GRAB WATER  
Sample Location: NWD-005 SW

Date Sampled: 02-24-94  
Date Received: 02-25-94  
Date of Analysis: 03-07-94  
Date Reported: 03-15-94

## ANALYTICAL RESULTS

<u>Target Analyte</u>	<u>RESULTS <math>\mu\text{gL}^{-1}</math> (ppb)</u>
Total Petroleum Hydrocarbons	1,300

## QUALITY ASSURANCE RESULTS

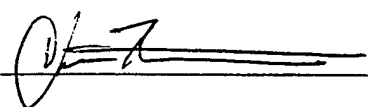
	<u>% RECOVERY</u>
Matrix Spike (300 $\mu\text{l}$ )	95.50 %
(Duplicate)	80.43 %
RPD	0.17 %

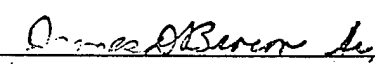
The laboratory blank was monitored for all analytes of interest.

This analysis was performed for Diesel constituents only.

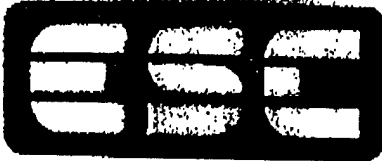
The analysis was run per Modified EPA Method 8015.

Time of analysis: 17:18  
Chemist: HJV

Data Release Authorized By: 

Data Release Authorized By: 





# Environmental Services Company, Inc.

CORPORATE OFFICE:  
18716 W. MARKHAM - P. O. BOX 8444  
LITTLE ROCK, ARKANSAS 72115  
(501) 221-2545 - FAX NO. (501) 221-1841

1107 CENTURY  
SPRINGDALE, ARKANSAS 72764  
(501) 750-1170 - FAX NO. (501) 750-1172

DATE: 4-12-94

TO: David Stevens

FROM: Lidny

NUMBER OF PAGES INCLUDING THIS PAGE: 3

Your CN# 9402010572 is our #3-0023 at the bottom  
of each page. Hope this helps.

2-0515 (SPK)	.261	1/5	.1047	.5233	104.9%
RB	.071		.0005		60.002
2-0524	.027		—		20.002
2-0524 (SPK)	.254	1/5	.1015	.5075	.5154
2-0524 (SPK)	.261	1/5	.1047	.5233	103.1%
3-0023 2-0572	.030		.0001		60.002



9997

METALS

50.19 ELEMENT Se DATE 3-2-94 TIME 1330 BY RJB

SAMPLE ID.	SPK. VALUE	ABSORBENCE READING	INITIAL DILUTION	DILUTION	Q.A. CONC.	FINAL CONC.
.002		.032				
.525		.089				
.100		.250				
B/Lnk		.026				
QMR D	(23)	.131	2X	.0458	.0229	99.6%
RB		.028		—		<0.002
4402010233		.028		—		<0.002
2-0233 (SPK)		.255	1/5	.1020	.5098	.5075
2-0233 (SPK) (Q.A.)		.253	1/5	.1010	.5052	101.5%
2-0054		.029		—		<0.002
2-0224		.032		.0010		<0.002
2-0226		.041		.0051		.005
2-0377		.030		.0001		<0.002
2-0378		.024		—		<0.002
2-0379		.030		.0001		<0.002
RB		.024		—		<0.002
2-0515		.030		.0001		<0.002
2-0515 (SPK)		.262	1/5	.1051	.5256	.5245
2-0515 (SPK) (Q.A.)		.261	1/5	.1047	.5233	101.9%
RB		.031		.0005		<0.002
2-0524		.027		—		<0.002
2-0524 (SPK)		.254	1/5	.1015	.5075	.5154
2-0524 (SPK) (Q.A.)		.261	1/5	.1047	.5277	103.1%
2-0572		.030		.0001		<0.002

SPDAL CNA

3-0007

3-0016

3-0017

3-0019

3-0020

3-0021

3-0022

3-0023



9999

METALS

ELEMENT As DATE 3-3-54 TIME 1330 BY RJ

SAMPLE ID.	SPK. VALUE	ABSORBENCE READING	INITIAL DILUTION	DILUTION	Q.A. CONC.	FINAL CONC.
.002		.056				
.025		.103				
.100		.246				
Blank		.041				
DMR 13	(280)	.301	1/2	.1283	.2566	91.72
RB		.041		—		20.002
2-002 (SPK)		.055		—		20.002
2-002 (SPK)		.242	1/10	.0971	.9775	97.49
2-002 (SPK)		.241	1/10	.0972	.9723	(97.5%)
2-0151		.032		—		20.002
RB		.038		—		20.002
2-0137		.044		—		20.002
2-0137 (SPK)		.240	1/10	.0967	.9671	.9775
2-0137 (SPK)		.244	1/10	.0988	.9879	(97.8%)
RB		.047		—		20.002
2-0515		.037		—		20.002
2-0515 (SPK)		.247	1/10	.1003	1.0034	1.0002
2-0515 (SPK)		.246	1/10	.0998	.9982	(99.8%)
RB		.047		—		20.002
2-0524		.047		—		20.012
2-0524 (SPK)		.243	1/10	.0982	.9827	.9801
2-0524 (SPK)		.242	1/10	.0977	.9775	(98.0%)
2-0572		.040		—		20.002
.002		.059				
.025		.102				
.100		.141				

50.3

11 CN#

0014

0012

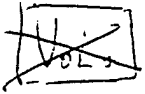
0022

0023



- 552 Sb - ~~425~~ 319

- 572 Pb, As  
↑ ↑ RFB



~~2105~~

3118

572

1624

Bis 2 ethyl

1553

210 731 0005



## Metal Digestion Log Worksheet

### RCRA Metals

Date: 03/01/94

Time: 0800

Analyst: LAC

Method: EPA SW-846 Method 3050A Digestion,  
followed by the appropriate 7000 Series GFAA Methods

Control Number	Matrix	Sample Volume/Weight	Spike	Final Extract Volume	Comments
Blank	H <sub>2</sub> O	50 ml		50 ml	
9402010531	soil	2.69g			
02-532	↑	2.40g			
02-533		2.38g			
02-534		2.75g			
02-534		2.29g	X		1 ppm AMS (spk)
02-534		2.22g	X		1 ppm AMS (spk dup)
02-535		2.68g			
02-536		2.20g			
02-537		2.29g			
02-538		2.55g			
02-539		3.06g			
02-540		2.19g			
02-540		2.34g			
02-542		2.33g			
02-543		2.26g			
02-544		2.21g			
02-544		2.31g	X		1 ppm AMS (spk)
02-544		2.55g	X		1 ppm AMS (spk dup)
02-551		2.19g			
02-552		2.15g			
02-553		2.10g			
02-554		2.24g			
02-556		2.51g			
02-557		2.99g			
02-558		2.62g			
02-559		2.31g			
02-560		2.63g			
02-561	↓	2.55g			



## RCRA Metals

Time: 1030

Analyst: LAC

Method: EPA SW-846 Method 3050A Digestion,  
followed by the appropriate 7000 Series GFAA Methods

[illegible]



## Metal Digestion Log Worksheet

## RCRA Metals

Date: 03/01/94

Time: 0800

Analyst: LAC

Method: EPA SW-846 Method 3050A Digestion,  
followed by the appropriate 7000 Series GFAA Methods

[illegible]



# METALS PREPARATION LOG

DATE: 03/11/94  
 TIME: 1600  
 ANALYST: LAC

Hg Digestions

## DIGESTION METHOD

CONTROL NUMBER	SAMPLE MATRIX	SAMPLE VOLUME OR WGT.	FINAL VOLUME DIGEST	COMMENTS
Blank	H <sub>2</sub> O	100ml	100ml	
9402010531	SOIL	2.15g	↑	
02-531 spk	↑	2.57g		25ppb <del>AMS</del> Hg
02-531 sdup		2.03g		25ppb <del>AMS</del> Hg
02-532		2.94g		
02-533		2.50g		
02-534		2.88g		
02-535		2.10g		
02-536		2.26g		
02-537		2.41g		
02-538		2.25g		
02-539		2.28g		
02-540		2.34g		
02-541		2.27g		
02-541 sp		2.08g		25ppb <del>AMS</del> Hg
02-541 sdup		3.06g	✓	25ppb <del>AMS</del> Hg
02-542		2.10g		
02-543		3.09g		
02-544	↓	2.34g	↓	

Sample Matrix: W = Water T = TCLP S = Soil O = Oil  
 MS = Matrix Spike MSD = Matrix Spike Dup MB = Method Blank  
 LCS = Lab Control Standard  
 HNO<sub>3</sub> Acid Mfg./Lot            /            Vol. Used             
 HCL Acid Mfg./Lot            /            Vol. Used             
 H<sub>2</sub>O<sub>2</sub> Mfg./Lot            /            Vol. Used             
 H<sub>2</sub>SO<sub>4</sub> Mfg./Lot            /            Vol. Used             
 Spike Standard Solution No.            Solution Concentration



# METALS PREPARATION LOG

DATE: 03/11/94  
 TIME: 1600  
 ANALYST: LAC

DIGESTION METHOD

*Hg Digestions*

CONTROL NUMBER	SAMPLE MATRIX	SAMPLE VOLUME OR WGT.	FINAL VOLUME DIGEST	COMMENTS
02-551	Soil	2.18g	100 ml	
02-552	↑	2.67g	↑	
02-553	↑	2.08g	↑	
02-554	↑	2.21g	↑	
02-555	↑	2.24g	↑	
02-556	↑	3.01g	↑	
02-557	↑	2.24g	↑	
02-557sp	↑	3.35g	↑	25 ppb Hg
02-557sdup	↑	2.32g	↑	25 ppb Hg
02-558	↑	2.81g	↑	
02-559	↑	2.29g	↑	
02-560	↑	2.95g	↑	
02-561	↑	2.04g	↑	
02-562	↑	4.02g	↑	
02-563	↓	2.18g	↓	

Sample Matrix: W = Water T = TCLP S = Soil O = Oil  
 MS = Matrix Spike MSD = Matrix Spike Dup. MB = Method Blank  
 LCS = Lab Control Standard  
 HNO<sub>3</sub> Acid Mfg./Lot \_\_\_\_\_ Vol. Used \_\_\_\_\_  
 HCL Acid Mfg./Lot \_\_\_\_\_ Vol. Used \_\_\_\_\_  
 H<sub>2</sub>O<sub>2</sub> Mfg./Lot \_\_\_\_\_ Vol. Used \_\_\_\_\_  
 H<sub>2</sub>SO<sub>4</sub> Mfg./Lot \_\_\_\_\_ Vol. Used \_\_\_\_\_



# Varian SpectrAA 10/20 System Report

OPERATOR 001  
DATE 03.10.94  
BATCH 1

PROGRAM 21 Se

INSTRUMENT MODE ABSORBANCE  
CALIBRATION MODE CONCENTRATION  
MEASUREMENT MODE PEAK HEIGHT  
LAMP CURRENT (mA) 10  
SLIT WIDTH (nm) 1.0  
WAVELENGTH (nm) 196.0  
SAMPLE INTRODUCTION SAMPLER AUTOMIXING  
TIME CONSTANT 0.05  
MEASUREMENT TIME (sec) 1.0  
REPLICATES 2  
BACKGROUND CORRECTION ON

## FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
	95	5.0	3.0	NORMAL	NO
	95	50.0	3.0	NORMAL	NO
3	135	5.0	3.0	NORMAL	NO
	135	5.0	3.0	NORMAL	NO
	800	5.0	3.0	NORMAL	NO
	800	8.0	0.0	NORMAL	NO
7	2400	0.8	0.0	NORMAL	YES
	2400	1.0	0.0	NORMAL	YES
	2500	3.0	3.0	NORMAL	NO

Se  
furnace  
03/10/94  
1600  
LAC

## SAMPLER PARAMETERS

### VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	10	10	5
STANDARD 3	20	0	5
SAMPLE	20	0	5

RECALIBRATION RATE 0  
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO



# SAMPLER PARAMETERS

VOLUMES (uL)

SOLUTION BLANK MODIFIER

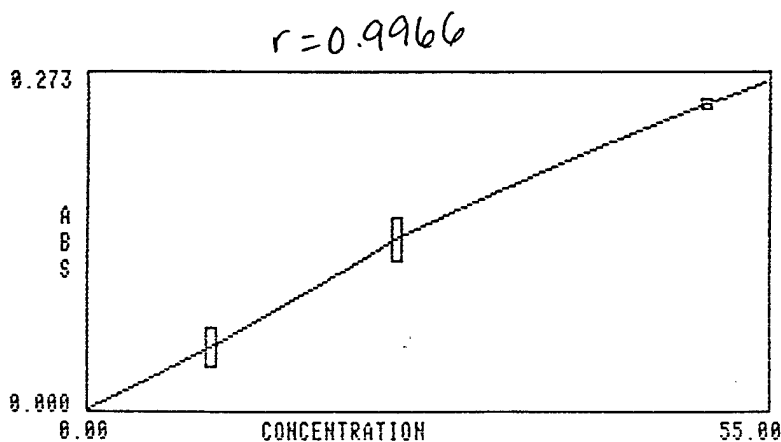
BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	10	10	5
STANDARD 3	20	0	5
SAMPLE	20	0	5

RECALIBRATION RATE 0

RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE	CONC	YRSD	MEAN ABS	READINGS
BLANK	0.00		0.224	0.348 0.100
BLANK	0.00		-0.018	-0.011 -0.026
STANDARD 1	10.00	25.7	0.051	0.042 0.060
STANDARD 2	25.00	11.7	0.139	0.128 0.151
STANDARD 3	50.00	0.5	0.248	0.247 0.249



0 03.01	11.63	76.4	0.060	0.092	0.028
25.00	18.52	7.5	0.099	0.105	0.094
02.531 1/50	13.24	64.1	0.069	0.038	0.100
02.532 1/25	15.49	32.7	0.082	0.100	0.063
02.533	2.70	99.9	0.014	0.029	-0.001 ± 0.0100
02.534 1/50	8.25	76.6	0.042	0.045	0.019 ± 0.0100

ppm

mg/kg

12.305  
16.135  
0.042

rediluted / reran



STANDARD 1	4	16	5
STANDARD 2	10	10	5
STANDARD 3	20	0	5
SAMPLE	20	0	5

RECALIBRATION RATE 0  
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE CONC XRSO MEAN ABS READINGS

ppm

mg/kg

BLANK	0.00		-0.023	-0.016	-0.031
02.534.1	13.61	38.4	0.071	0.052	0.090
02.534.1	14.86	3.8	0.078	0.080	0.076
02.535	20.23	44.8	0.110	0.075	0.144
02.536	1.02	26.7	0.021	0.024	0.017
02.537	6.67	25.2	0.034	0.040	0.028
02.538	6.24	58.3	0.032	0.019	0.045
02.539	18.73	20.7	0.100	0.086	0.115
02.540	10.63	2.3	0.054	0.055	0.054
02.541	24.58	18.0	0.137	0.119	0.154
02.542	32.77	10.4	0.176	0.163	0.189
02.543	47.01	23.4	0.237	0.197	0.276
02.544	OVER	21.2	0.307	0.261	0.353
02.544.1	OVER	10.7	0.315	0.339	0.291
02.544.1	33.15	28.1	0.178	0.213	0.143
02.551	1.42	99.9	0.007	0.014	0.000
02.552	-2.19	33.1	-0.011	-0.009	-0.014
02.553	-2.96	33.3	-0.015	-0.012	-0.019
02.554	-1.25	15.1	-0.006	-0.006	-0.007
02.555	-1.33	99.9	-0.007	0.006	-0.019
02.556	-3.26	24.6	-0.017	-0.014	-0.020
02.557	-2.02	99.9	-0.010	-0.001	-0.020

136.300

8.5058

rediluted / reran  
sorry 10.0100

0.0937  
0.0532  
0.1229  
0.1639  
0.2351

rediluted / reran

29.716  
33.469  
9.437

0.039  
1.530  
1.214  
2.626  
3.516  
5.2002

0.046  
0.047  
0.048  
0.045  
0.040  
0.040  
0.033

SAMPLE CONC XRSO MEAN ABS READINGS

02.558	-0.76	99.9	-0.004	-0.015	0.008
02.559	6.50	21.0	0.033	0.028	0.038
02.560	24.50	1.2	0.136	0.135	0.137
02.561	49.99	5.2	0.248	0.239	0.257
02.562	13.88	19.1	0.072	0.082	0.063
02.562.1	16.51	29.6	0.087	0.069	0.166
02.562.1	11.41	16.2	0.059	0.052	0.065
02.563	8.26	5.7	0.042	0.044	0.040
02.544	OVER	14.2	0.455	0.409	0.501
02.544.1	16.67	12.0	0.088	0.096	0.081
02.536	11.18	83.8	0.057	0.023	0.091
02.537	12.21	33.6	0.063	0.078	0.048
02.538	12.12	49.2	0.063	0.084	0.041
02.544.1	19.47	14.0	0.105	0.115	0.095
02.544.1	15.80	19.6	0.083	0.095	0.072
02.544.1	14.87	19.2	0.078	0.047	0.080

10.010  
0.0325  
0.0245  
0.0499  
0.0139

0.0165 rediluted / reran  
1.141 112.7%

10.010  
0.0333  
0.0112  
0.0122  
0.0122 3030  
0.0155 0.1947  
1.580  
1.487

129.2%

0.038  
0.7040  
0.4166  
0.978  
0.2536

23.672  
0.040

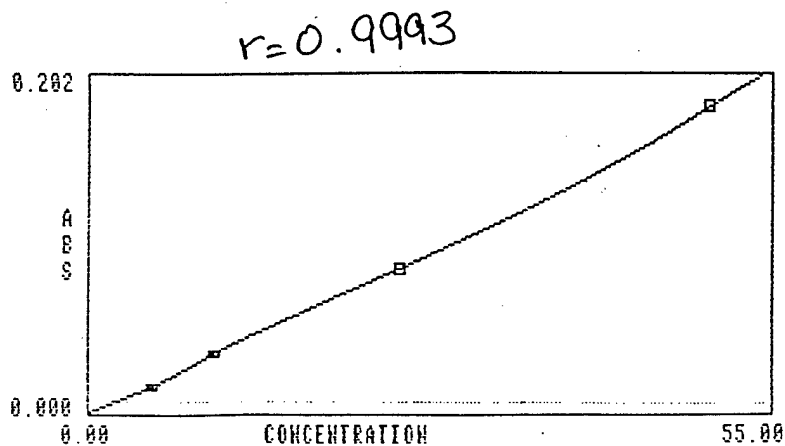
0.727  
0.255  
0.066 6.824  
2.202  
4.486  
36.406  
22.186



PROGRAM 1 Hg

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	253.7
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	90
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

BLANK	0.00	0.000	0.000	-0.000	-0.000
STANDARD 1	5.00	0.0	0.015	0.015	0.015
STANDARD 2	10.00	0.3	0.034	0.034	0.034
STANDARD 3	25.00	1.0	0.084	0.085	0.084
STANDARD 4	50.00	1.0	0.183	0.183	0.185



Hg  
VGA  
03/12/94  
1330  
UAC



0 03.11	1.47	5.8	0.004	0.005	0.004	0.004	mg/kg
10.00	10.52	0.2	0.036	0.036	0.036	0.036	
02.531	2.76	3.6	0.008	0.008	0.008	0.008	<del>0.274</del> 0.1514
02.531.25	26.15	0.2	0.088	0.089	0.088	0.088	1.199 93.690
02.531.25	26.95	0.3	0.091	0.091	0.091	0.091	1.049
02.532	2.41	3.0	0.007	0.007	0.007	0.007	<del>0.207</del> 0.0999
02.533	2.72	2.0	0.008	0.008	0.008	0.008	<del>0.232</del> 0.1211
02.534	2.71	0.0	0.008	0.008	0.008	0.008	<del>0.204</del> 0.1105
02.535	1.65	4.0	0.005	0.005	0.005	0.005	<del>0.275</del> 0.0906
02.536	2.34	2.2	0.007	0.007	0.007	0.007	<del>0.241</del> 0.1127
02.537	2.30	0.0	0.007	0.007	0.007	0.007	<del>0.232</del> 0.1065
02.538	2.39	2.6	0.007	0.007	0.007	0.007	<del>0.261</del> 0.1250
02.539	2.93	0.0	0.009	0.009	0.009	0.009	<del>0.260</del> 0.1524
02.540	2.47	8.2	0.007	0.008	0.007	0.007	<del>0.240</del> 0.1187
02.541	1.33	5.2	0.004	0.004	0.004	0.004	<del>0.267</del> 0.0710
<del>02.541.25</del>	<del>1.33</del>	<del>5.2</del>	<del>0.004</del>	<del>0.004</del>	<del>0.004</del>	<del>0.004</del>	<del>0.267</del> reran
<del>02.541.25</del>	<del>1.74</del>	<del>2.9</del>	<del>0.006</del>	<del>0.006</del>	<del>0.006</del>	<del>0.006</del>	wrong sample reran 107.690
02.541.25	28.23	0.0	0.095	0.095	0.095	0.095	1.118
02.541.25	28.61	0.6	0.097	0.096	0.097	0.097	1.133
02.542	3.40	1.5	0.010	0.010	0.010	0.010	<del>0.274</del> 0.1865
02.543	3.04	2.2	0.009	0.009	0.009	0.009	<del>0.199</del> 0.1208
02.544	3.34	0.0	0.010	0.010	0.010	0.010	<del>0.247</del> 0.1647
02.551	0.92	6.0	0.003	0.003	0.003	0.003	<del>0.256</del> 0.0472
02.552	1.93	0.0	0.006	0.006	0.006	0.006	<del>0.208</del> 0.0802
02.553	1.21	3.5	0.004	0.003	0.004	0.003	<del>0.263</del> 0.0636
02.554	1.02	3.5	0.003	0.003	0.003	0.003	<del>0.272</del> 0.05540
02.555	0.99	5.2	0.003	0.003	0.003	0.003	<del>0.261</del> 0.0368
02.556	1.10	3.3	0.003	0.003	0.003	0.003	<del>0.186</del> 0.0573
02.557	0.51	17.5	0.001	0.002	0.001	0.001	<del>0.257</del> 96.090 0.0262
02.557.25	24.51	0.8	0.083	0.082	0.083	0.083	0.843
02.557.25	25.15	0.6	0.085	0.084	0.085	0.085	0.865
02.558	2.19	2.9	0.006	0.007	0.006	0.006	<del>0.210</del> 0.0920
02.559	0.90	6.1	0.003	0.003	0.003	0.003	<del>0.248</del> 0.0446
02.560	0.91	8.3	0.003	0.003	0.003	0.003	<del>0.203</del> 0.0370
02.561	4.04	0.5	0.012	0.012	0.012	0.012	<del>0.267</del> 0.2154
02.562	1.63	2.9	0.005	0.005	0.005	0.005	<del>0.197</del> 0.0641
02.563	1.34	8.4	0.004	0.004	0.004	0.004	<del>0.335</del> 0.0897
0	0.42	23.8	0.001	0.001	0.002	0.001	



PROGRAM 1 Hg

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	253.7
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	60
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

	0.00		0.054	0.054	0.054	0.054
ANK	0.00		0.002	0.002	0.002	0.002
STANDARD 1	5.00	3.0	0.008	0.007	0.008	0.008
STANDARD 2	10.00	2.9	0.009	0.009	0.007	0.009

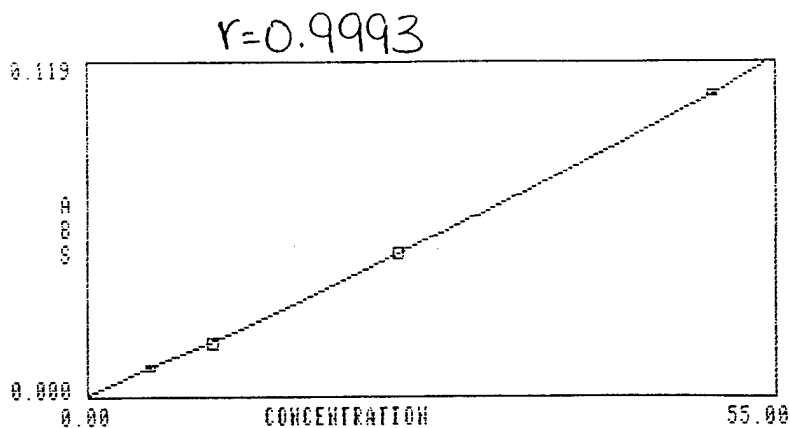
	0.00		-0.013	-0.013	-0.013	-0.013
ANK	0.00		0.000	-0.000	0.000	0.000
STANDARD 1	5.00	7.5	0.001	0.001	0.001	0.001
STANDARD 2	10.00	3.2	0.002	0.002	0.002	0.002
STANDARD 3	25.00	3.8	0.003	0.003	0.003	0.003

Hg  
VGA  
03/14/94  
0900  
LAC

ANK	0.00		0.011	0.011	0.011	0.011
STANDARD 1	5.00	2.0	0.010	0.009	0.010	0.010
STANDARD 2	10.00	4.1	0.019	0.018	0.019	0.019
STANDARD 3	25.00	1.6	0.050	0.049	0.050	0.050
STANDARD 4	50.00	0.4	0.108	0.108	0.108	0.108

$r=0.9993$





470  
550  
451 TUP

0.03.13	7.35	12.6	0.014	0.016	0.014	0.012
10.00	11.48	0.0	0.021	0.021	0.021	0.021
0.431	3.98	5.3	0.008	0.008	0.008	0.007
02.431.25	26.50	10.0	0.053	0.051	0.053	0.055
02.431.25	29.43	1.9	0.060	0.059	0.059	0.061
0.470	6.96	7.2	0.013	0.014	0.013	0.012
0.524	4.66	0.7	0.009	0.009	0.009	0.009
02.547	4.47	9.0	0.009	0.009	0.008	0.008
0.548	4.55	1.4	0.009	0.009	0.009	0.009
0.549	4.98	0.0	0.009	0.009	0.010	0.009
02.550	5.57	0.8	0.011	0.011	0.011	0.011
03.094	5.95	0.0	0.011	0.011	0.011	0.011
0.572	5.99	2.3	0.011	0.011	0.011	0.012
02.572.25	29.40	2.5	0.060	0.058	0.059	0.061
02.572.25	31.85	1.2	0.065	0.064	0.065	0.066
0.119	10.34	3.7	0.019	0.020	0.019	0.019
0.120	12.74	1.6	0.024	0.024	0.024	0.024
03.121	8.49	0.4	0.016	0.016	0.016	0.016
03.122	10.68	1.2	0.020	0.020	0.020	0.020
0.123	11.32	0.3	0.021	0.021	0.021	0.021
03.124	11.08	1.4	0.021	0.020	0.021	0.021
03.125	8.97	2.6	0.017	0.017	0.017	0.016
0.175	7.81	0.4	0.015	0.015	0.015	0.015
0.515	8.19	0.6	0.015	0.015	0.015	0.015
02.515.25	35.07	1.2	0.073	0.072	0.072	0.074
0.515.25	36.41	1.3	0.076	0.075	0.076	0.077
0.515.200	OVER	2.1	0.123	0.121	0.123	0.126
02.515.200	37.65	3.9	0.079	0.076	0.079	0.082
03.094	12.79	3.9	0.024	0.025	0.024	0.023
0.094.200	38.03	1.3	0.080	0.078	0.080	0.080
03.118	14.62	0.0	0.028	0.029	0.028	0.026
03.118.200	42.09	1.5	0.089	0.088	0.089	0.091
0.119	0.54	17.6	0.001	0.001	0.001	0.001
0.119	0.82	18.3	0.002	0.001	0.002	0.002
0	-0.48	9.5	-0.001	-0.001	-0.001	-0.001
0.00	9.55	2.6	0.018	0.017	0.018	0.018
02.120	5.49	1.2	0.010	0.010	0.010	0.011
02.121	1.63	5.5	0.003	0.003	0.003	0.003
02.122	1.74	0.0	0.003	0.003	0.003	0.003
02.123	3.81	1.8	0.007	0.007	0.007	0.007
02.124	3.88	0.0	0.007	0.007	0.007	0.007
02.125	3.97	0.0	0.007	0.007	0.007	0.007

reran

diluted / reran

reran



02.119	1.83	5.5	0.003	0.003	0.003	0.003
<del>02.120</del>	<del>1.74</del>	<del>0.0</del>	<del>0.003</del>	<del>0.003</del>	<del>0.003</del>	<del>0.003</del>
02.122	3.61	4.8	0.007	0.007	0.007	0.007
02.123	3.88	0.0	0.007	0.007	0.007	0.007
02.124	3.72	0.9	0.007	0.007	0.007	0.007
02.125	1.11	12.2	0.002	0.002	0.002	0.002
02.119	0.98	0.0	0.002	0.002	0.002	0.002
<del>02.120</del>	<del>5.74</del>	<del>3.4</del>	<del>0.010</del>	<del>0.010</del>	<del>0.010</del>	<del>0.011</del>
02.120	5.78	3.6	0.011	0.011	0.011	0.011
02.121	1.47	14.0	0.003	0.003	0.002	0.003
02.122	3.38	0.9	0.006	0.007	0.006	0.006
02.123	3.59	0.0	0.007	0.007	0.007	0.007
02.124	3.11	2.1	0.006	0.006	0.006	0.006
02.125	1.03	8.7	0.002	0.002	0.002	0.002
03.119	0.89	8.8	0.002	0.002	0.002	0.002
03.120	4.52	1.4	0.009	0.009	0.008	0.009
03.121	1.27	13.1	0.002	0.003	0.003	0.002
03.122	3.22	1.7	0.006	0.006	0.006	0.006
03.123	2.93	1.9	0.006	0.005	0.006	0.006
03.124	2.42	0.0	0.005	0.005	0.005	0.005
03.125	0.03	99.9	0.000	0.000	0.000	-0.000
02.451.200	1453.73	2.2	0.118	0.115	0.118	0.120
2.451	<u>10.59</u>	<u>102.70%</u>	0.020	0.020	0.020	0.020

<u>119</u>	<u>120</u>	<u>121</u>	<u>122</u>	<u>123</u>	<u>124</u>	<u>125</u>
0.98	5.49	1.63	3.61	3.88	3.72	1.11
0.89	5.78	1.47	3.38	3.59	3.11	1.03
↓	<del>4.52</del>	<del>1.27</del>	<del>3.22</del>	<del>2.93</del>	<del>2.42</del>	<del>0.03</del>
0.935	↓	↓	↓	↓	↓	↓
	5.635	1.550	3.495	3.735	3.415	1.070



RECALIBRATION RATE 0  
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO  
TEMPERATURE 70  
INJECT RATE 1

PROGRAM 1 As

INSTRUMENT MODE ABSORBANCE  
CALIBRATION MODE CONCENTRATION  
MEASUREMENT MODE PEAK HEIGHT  
LAMP CURRENT (mA) 10  
SLIT WIDTH (nm) 0.5  
WAVELENGTH (nm) 193.7  
SAMPLE INTRODUCTION SAMPLER AUTOMIXING  
TIME CONSTANT 0.05  
MEASUREMENT TIME (sec) 1.0  
REPLICATES 2  
BACKGROUND CORRECTION ON

STEP NO.	FURNACE PARAMETERS			GAS TYPE	READ COMMAND
	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)		
1	95	5.0	3.0	NORMAL	NO
2	95	50.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	140	5.0	3.0	NORMAL	NO
5	800	10.0	3.0	NORMAL	NO
6	800	5.0	3.0	NORMAL	NO
7	800	2.0	0.0	NORMAL	YES
8	2500	0.9	0.0	NORMAL	YES
9	2500	2.0	0.0	NORMAL	YES
10	2600	3.0	3.0	NORMAL	NO

SAMPLER PARAMETERS		
VOLUMES (uL)		
SOLUTION	BLANK	MODIFIER

BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	16	0	5

As  
furnace  
03/11/94  
1630  
LAC



10 . 2600 3.0 3.0 NORMAL NO

SAMPLER PARAMETERS

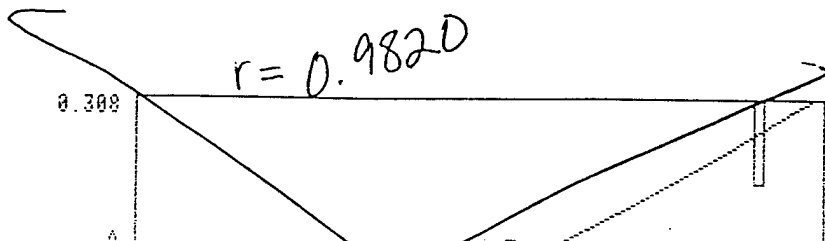
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	5
STANDARD 1	4	16	5
STANDARD 2	12	8	5
STANDARD 3	20	0	5
SAMPLE	20	0	5

RECALIBRATION RATE 0  
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT YES PRE INJECT NO  
TEMPERATURE 70  
INJECT RATE 1

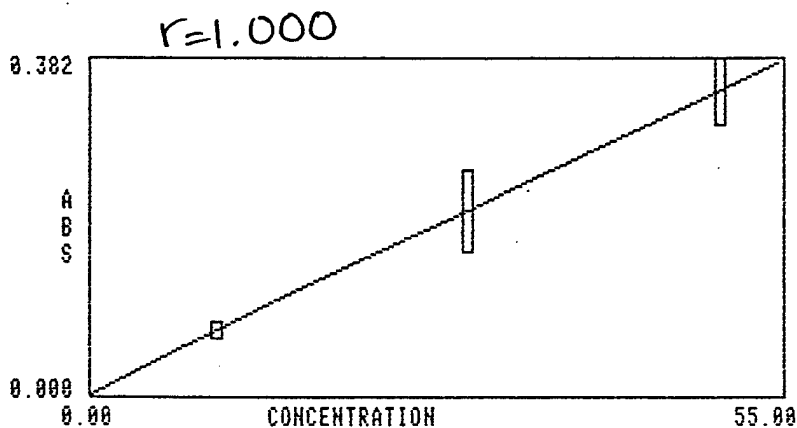
SAMPLE	CONC	ZRSD	MEAN ABS	READINGS
BLANK	0.00	-0.077	-0.089	-0.065
BLANK	0.00	-0.035	-0.047	-0.024
BLANK	0.00	0.002	0.010	-0.006
BLANK	0.00	0.013	0.016	0.010
BLANK	0.00	-0.019	-0.015	-0.024
STANDARD 1	10.00	15.2	0.091	0.101 0.082
STANDARD 2	30.00	15.5	0.154	0.171 0.138
STANDARD 3	50.00	15.7	0.280	0.249 0.311





0.000  
0.00  
CONCENTRATION  
55.00

PLE	CONC	XRSD	MEAN ABS	READINGS
WK	0.00		-0.017	-0.023 -0.012
WK	0.00		0.009	0.006 0.012
NDARD 1	10.00	8.3	0.073	0.069 0.078
NDARD 2	30.00	20.2	0.209	0.180 0.239
NDARD 3	50.00	10.2	0.348	0.322 0.373



0.01	-1.14	13.6	-0.008	-0.008	-0.009
00	25.39	6.1	0.179	0.172	0.187
31 '15	OVER	25.9	2.953	2.413	3.494
32 '150	6.26	5.2	0.046	0.046	0.044
33 '150	1.07	13.1	0.030	0.039	0.021
34 '125	12.90	3.8	0.094	0.092	0.097

rediluted / reran

2.932 mg/kg

LE	CONC	XRSD	MEAN ABS	READINGS
----	------	------	-------------	----------

2.932 mg/kg



0 03.01	-1.14	13.6	-0.008	-0.008	-0.009
25.00	25.39	6.1	0.179	0.172	0.187
02.531	115 OVER	25.9	2.953	2.4134	3.4944
02.532	150 6.26	5.2	0.046	0.048	0.044
02.533	150 4.07	4.1	0.030	0.039	0.021
02.534	125 12.90	3.8	0.094	0.092	0.097

rediluted 1 reran

2.932 mg/kg

SAMPLE	CONC	XRSD	MEAN ABS	READINGS
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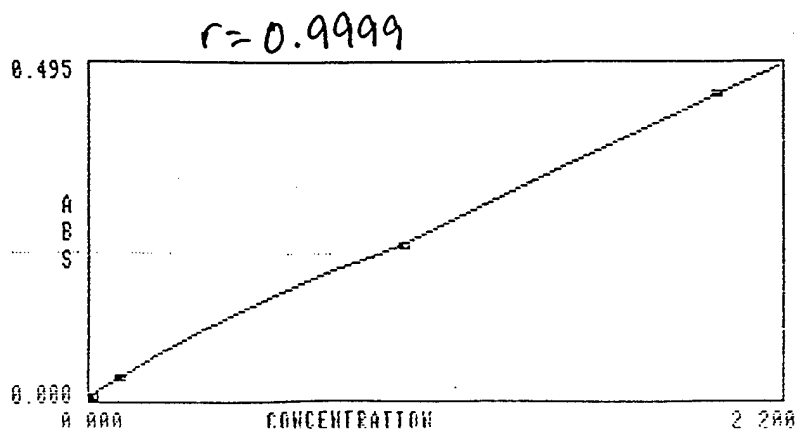
02.534.1	1100 14.04	12.7	0.102	0.111	0.093	30.655 mg/kg	108.1%
02.534.1	1100 15.16	31.8	0.110	0.135	0.085	34.144	
02.535	OVER	21.3	0.495	0.570	0.421		
02.536	OVER	8.1	0.469	0.496	0.442		
02.537	125 18.70	8.7	0.134	0.126	0.143	10.207 mg/kg	
02.538	125 22.28	44.4	0.159	0.208	0.109	10.922	
02.539	110 27.40	11.6	0.193	0.177	0.208	4.477	
02.540	125 28.31	2.3	0.198	0.195	0.202	16.159	
02.541	125 24.97	17.5	0.177	0.198	0.155	13.339	
02.542	125 27.43	16.0	0.193	0.171	0.215	14.716	
02.543	125 12.63	28.1	0.092	0.074	0.110	6.986	
02.554	125 21.06	3.4	0.150	0.154	0.147	12.131	
02.554.1	1100 15.98	1.8	0.116	0.117	0.114	34.589	
02.544.1	1100 18.40	6.0	0.132	0.127	0.138	rediluted 1 reran	107.2%
02.551	125 11.66	3.3	0.085	0.087	0.083	6.655	
02.552	125 17.50	29.1	0.126	0.152	0.100	10.174	
02.553	125 5.75	2.0	0.077	0.042	0.037	rediluted 1 reran	
02.554	125 11.16	12.4	0.082	0.075	0.089	6.228	
02.555	125 16.26	14.3	0.118	0.129	0.106	8.098	
02.556	125 20.96	12.1	0.150	0.163	0.137	10.438	
02.557	125 16.67	15.8	0.120	0.134	0.107	6.944	
02.558	125 25.61	18.4	0.181	0.157	0.204	12.219	
02.559	125 22.98	4.7	0.163	0.169	0.158	12.435	
02.560	125 22.17	4.5	0.158	0.163	0.153	10.537	
02.561	125 27.50	0.7	0.193	0.194	0.192	13.480	
02.562	125 18.73	9.2	0.135	0.143	0.126	9.715	
02.562.1	1100 23.87	2.5	0.169	0.179	0.159	rediluted 1 reran	
02.562.1	1100 17.79	21.8	0.128	0.108	0.148	35.298	
02.563	125 19.53	9.1	0.140	0.131	0.149	9.765	
02.533	125 23.60	14.2	0.167	0.184	0.151	12.395	112.3%
02.532	125 20.04	5.8	0.143	0.138	0.149	10.438	
02.533	125 9.77	6.1	0.072	0.075	0.069	rediluted 1 reran	
02.535	125 12.08	18.0	0.088	0.100	0.077	5.634	
02.536	125 14.79	13.3	0.107	0.097	0.117	8.403	
02.553	125 25.78	12.6	0.182	0.198	0.166	3.069	
02.533	110 25.32	4.2	0.179	0.174	0.184	5.319	
02.562.1	15.91 1100 11.5		0.115	0.106	0.125	33.008	
02.564	14.70 1100 15.6		0.107	0.095	0.118	32.813	



PROGRAM 20 Cd

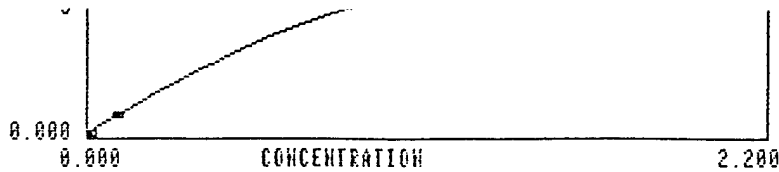
INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	228.8
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

	0.000		0.022	0.021	0.022	0.022
	0.000		0.001	0.001	0.001	0.001
RD 1	0.010	7.6	0.005	0.005	0.005	0.005
RD 2	0.100	0.0	0.031	0.031	0.032	0.031
RD 3	1.000	0.2	0.229	0.228	0.229	0.229
RD 4	2.000	0.2	0.450	0.450	0.449	0.451



Cd  
flame  
03/08/94  
1530  
LAC





0 03.01	0.032	4.4	0.014	0.013	0.014	0.014	
0.100	0.142	0.3	0.044	0.044	0.044	0.044	
02.531	0.061	1.5	0.023	0.023	0.023	0.023	1.134 mg/kg
02.532	0.067	1.4	0.024	0.024	0.024	0.025	1.396
02.533	0.073	1.1	0.026	0.026	0.026	0.026	1.534
02.534	0.085	0.6	0.029	0.028	0.028	0.029	1.545
02.534.1	1.145	0.2	0.261	0.261	0.262	0.261	25.000
02.534.1	1.162	0.4	0.265	0.265	0.264	0.266	26.171
<del>02.535</del>	<del>0.129</del>	<del>0.4</del>	<del>0.040</del>	<del>0.040</del>	<del>0.040</del>	<del>0.040</del>	
<del>02.536</del>	<del>0.112</del>	<del>0.4</del>	<del>0.033</del>	<del>0.033</del>	<del>0.035</del>	<del>0.035</del>	> wrong samples
<del>02.537</del>	<del>0.110</del>	<del>0.4</del>	<del>0.034</del>	<del>0.035</del>	<del>0.034</del>	<del>0.035</del>	
02.538	0.025	3.5	0.011	0.011	0.012	0.012	0.490
02.539	0.018	3.1	0.008	0.008	0.009	0.008	0.294
02.540	0.018	1.2	0.008	0.009	0.008	0.008	0.411
02.541	0.054	1.9	0.021	0.021	0.021	0.020	1.154
02.542	0.026	1.4	0.012	0.012	0.012	0.012	0.558
02.543	0.024	0.0	0.011	0.011	0.011	0.011	0.531
02.544	0.027	0.7	0.012	0.012	0.012	0.012	0.622
02.544.1	1.038	0.7	0.237	0.236	0.238	0.239	22.468
02.544.1	1.043	0.3	0.238	0.238	0.238	0.239	20.451
02.551	0.033	0.6	0.014	0.014	0.014	0.014	0.753
02.552	0.031	0.8	0.014	0.014	0.014	0.013	0.721
02.553	0.040	0.6	0.017	0.017	0.017	0.017	0.952
02.554	0.010	2.5	0.005	0.005	0.005	0.005	0.223
02.555	0.050	1.9	0.020	0.020	0.019	0.020	0.996
02.556	0.018	1.9	0.008	0.008	0.008	0.009	0.3010
02.557	0.017	2.9	0.008	0.008	0.008	0.008	0.3244
02.558	0.016	0.0	0.007	0.008	0.007	0.007	0.3463
02.559	0.022	3.2	0.010	0.010	0.010	0.010	0.4183
02.560	0.020	0.0	0.009	0.009	0.009	0.009	0.392
02.561	0.013	4.3	0.007	0.007	0.006	0.007	0.236
02.562	0.284	0.8	0.083	0.083	0.083	0.084	5.183
02.562.1	1.307	0.3	0.297	0.297	0.298	0.298	27.116
02.562.1	1.313	0.2	0.299	0.298	0.298	0.299	26.052
02.563	0.302	0.5	0.088	0.087	0.088	0.088	6.040
02.535	0.048	1.4	0.019	0.019	0.019	0.019	0.896
02.536	0.030	4.4	0.013	0.014	0.013	0.013	0.682
02.537	0.026	1.8	0.012	0.011	0.012	0.011	0.568
0 02.28	0.019	1.4	0.009	0.009	0.009	0.009	
02.234	<u>0.030</u>	1.0	0.013	0.013	0.013	0.013	
02.234.1	1.122	0.7	0.256	0.255	0.258	0.256	109.290
02.234.1	1.125	0.6	0.257	0.257	0.258	0.255	
02.572	<u>0.028</u>	1.1	0.012	0.013	0.012	0.012	
0	-0.001	35.4	-0.000	-0.000	-0.000	-0.001	
1.00	0.976	0.3	0.225	0.224	0.225	0.225	

106.090

101.190

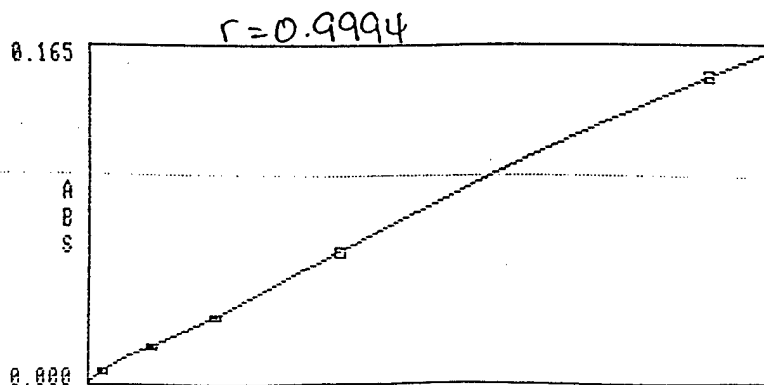
102.390



PROGRAM 20 Pb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	217.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

	0.000		0.189	0.189	0.188	0.189
	0.000		-0.002	-0.002	-0.002	-0.003
K	0.000		-0.041	-0.040	-0.041	-0.041
	0.000		-0.000	-0.000	-0.000	-0.000
STD 1	0.100	11.0	0.005	0.006	0.005	0.005
STD 2	0.500	1.3	0.017	0.017	0.017	0.017
STD 3	1.000	1.0	0.032	0.032	0.032	0.032
STD 4	2.000	1.4	0.066	0.065	0.065	0.067
STD 5	5.000	0.6	0.150	0.149	0.150	0.151



Pb  
flame  
1130  
03/11/94  
UAC



0.000

CONCENTRATION

5.500

0.03.01	0.063	21.5	0.003	0.003	0.003	0.004	mg/kg
0.100	0.109	8.2	0.006	0.005	0.006	0.006	
02.531	1.323	0.6	0.043	0.043	0.042	0.043	24.591
02.532	0.818	3.2	0.027	0.027	0.026	0.028	17.042
02.533	0.546	1.2	0.019	0.018	0.018	0.019	11.375
02.534	0.951	1.2	0.031	0.031	0.030	0.030	17.291
02.534.1	1.653	0.7	0.054	0.054	0.053	0.054	36.092
02.534.1	1.651	0.9	0.054	0.053	0.054	0.054	37.185
02.535	0.947	2.2	0.030	0.030	0.030	0.031	17.668
02.536	1.185	1.5	0.038	0.038	0.038	0.039	26.932
02.537	0.727	1.9	0.024	0.025	0.024	0.024	15.873
02.538	2.311	0.4	0.075	0.075	0.075	0.075	45.314
02.539	1.350	1.3	0.043	0.044	0.043	0.044	22.059
02.540	1.120	1.6	0.036	0.036	0.036	0.035	25.571
<del>02.541</del>	<del>OVER</del>	<del>0.1</del>	<del>0.057</del>	<del>0.055</del>	<del>0.055</del>	<del>0.055</del>	<del>59.829</del>
02.541 1/2	0.112	2.80	0.006	0.005	0.006	0.006	59.829
02.542	1.072	2.5	0.034	0.033	0.035	0.035	23.004
02.543	1.248	0.7	0.040	0.040	0.040	0.040	27.611
02.544	0.990	1.8	0.032	0.032	0.032	0.031	22.811
02.544.1	1.797	1.1	0.059	0.058	0.059	0.059	38.896
02.544.1	1.823	0.4	0.059	0.059	0.060	0.059	35.745
02.551	0.933	1.9	0.030	0.031	0.030	0.030	21.301
02.552	0.473	0.9	0.017	0.017	0.017	0.016	11.000
02.553	1.199	0.9	0.038	0.039	0.038	0.038	28.648
02.554	1.689	0.7	0.055	0.055	0.055	0.055	37.701
02.555	2.126	0.7	0.069	0.070	0.069	0.069	42.851
02.556	1.611	0.3	0.052	0.052	0.052	0.052	32.092
02.557	1.210	0.4	0.039	0.039	0.039	0.039	20.234
02.558	1.639	1.9	0.053	0.053	0.052	0.054	31.279
02.559	1.385	1.0	0.045	0.045	0.045	0.044	29.978
02.560	0.631	1.8	0.021	0.021	0.022	0.021	11.996
02.561	0.616	1.4	0.021	0.021	0.021	0.021	12.078
<del>02.562</del>	<del>OVER</del>	<del>0.1</del>	<del>0.057</del>	<del>0.055</del>	<del>0.055</del>	<del>0.055</del>	<del>59.829</del>
02.562 1/2	1.504	3.00	0.049	0.048	0.049	0.048	54.891
<del>02.562.1</del>	<del>OVER</del>	<del>0.1</del>	<del>0.057</del>	<del>0.055</del>	<del>0.055</del>	<del>0.055</del>	<del>59.829</del>
<del>02.562.1</del>	<del>OVER</del>	<del>0.1</del>	<del>0.057</del>	<del>0.055</del>	<del>0.055</del>	<del>0.055</del>	<del>59.829</del>
02.562.1 1/2	2.003	4.00	0.066	0.066	0.065	0.066	83.071
02.562.1 1/2	1.982	3.90	0.065	0.065	0.065	0.066	78.651
<del>02.563</del>	<del>OVER</del>	<del>0.1</del>	<del>0.057</del>	<del>0.055</del>	<del>0.055</del>	<del>0.055</del>	<del>59.829</del>
02.563 1/5	4.767	23.83	0.144	0.143	0.144	0.144	476.700
0	0.046	34.0	0.002	0.002	0.003	0.002	
1.00	1.048	1.2	0.034	0.034	0.033	0.034	

70.2%

80.7%

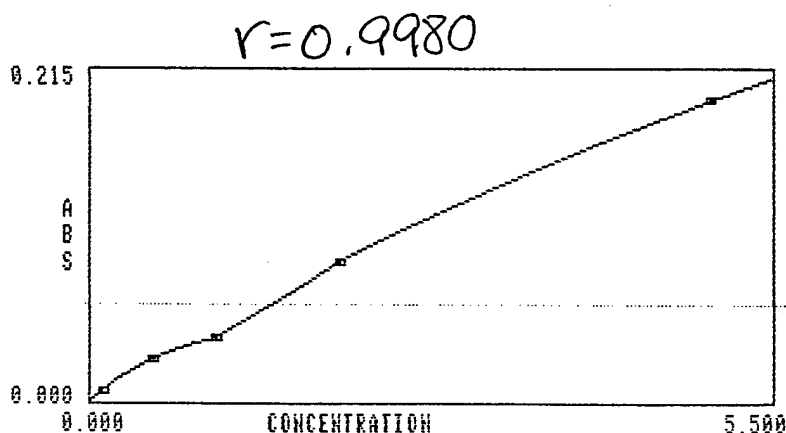
99.6%



PROGRAM 20 Pb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	217.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

BLANK	0.000		0.157	0.156	0.157	0.157
BLANK	0.000		-0.001	-0.001	-0.001	-0.001
STANDARD 1	0.100	7.1	0.007	0.007	0.007	0.008
STANDARD 2	0.500	2.2	0.028	0.028	0.029	0.027
STANDARD 3	1.000	0.3	0.042	0.042	0.042	0.042
STANDARD 4	2.000	0.2	0.091	0.091	0.091	0.091
STANDARD 5	5.000	0.3	0.196	0.195	0.196	0.195



Pb  
flame  
03/18/94  
1500  
LAC

0.02.28	0.050	9.4	0.004	0.003	0.004	0.004
0.500	0.566	2.3	0.030	0.031	0.030	0.030
02.524	0.114	2.2	0.008	0.008	0.008	0.008
02.524.1	1.172	0.4	0.050	0.050	0.050	0.050
02.524.1	1.237	0.3	0.053	0.053	0.053	0.053
02.572	0.119	7.5	0.009	0.008	0.008	0.009
1.00	1.101	1.4	0.047	0.046	0.046	0.047
0	-0.001	99.9	-0.000	-0.000	-0.001	0.001

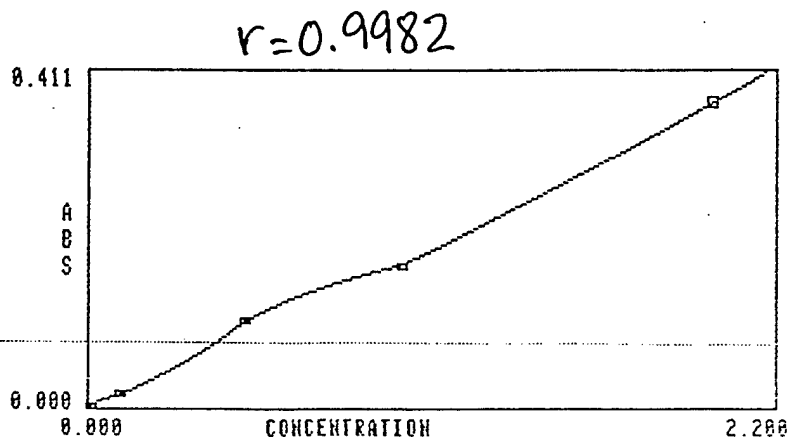
105.870



PROGRAM 20 Be

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	234.9
FLAME	N2O-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

ANK	0.000	-0.003	-0.003	-0.003	-0.003	
ANK	0.000	-0.001	-0.001	-0.001	-0.001	
STANDARD 1	0.005	24.5	0.001	0.001	0.001	0.001
STANDARD 2	0.100	0.9	0.015	0.015	0.015	0.016
STANDARD 3	0.500	0.1	0.105	0.105	0.106	0.105
STANDARD 4	1.000	0.6	0.173	0.172	0.174	0.174
STANDARD 5	2.000	0.7	0.373	0.372	0.372	0.376



Be  
flame  
03/09/94  
1015  
LAC



0.000  
0.000

CONCENTRATION

2.200

0 03.01	-0.004	10.5	-0.001	-0.001	-0.001	-0.001	-0.001
0.100	0.090	1.5	0.014	0.015	0.015	0.014	0.014
02.531	0.018	3.5	0.004	0.004	0.004	0.004	0.004
02.532	0.021	2.6	0.005	0.005	0.004	0.005	0.005
02.533	0.012	4.9	0.003	0.003	0.003	0.003	0.003
02.534	0.018	2.2	0.004	0.004	0.004	0.004	0.004
02.534.1	1.006	98.8	0.175	0.174	0.175	0.174	0.174
02.534.1	1.002	0.3	0.174	0.174	0.173	0.174	0.174
02.535	0.027	0.0	0.006	0.006	0.006	0.006	0.006
02.536	0.038	2.8	0.008	0.007	0.008	0.008	0.008
02.537	0.012	11.1	0.003	0.003	0.003	0.003	0.003
02.538	0.026	0.0	0.006	0.006	0.006	0.006	0.006
02.539	0.021	4.3	0.005	0.004	0.005	0.005	0.005
02.540	0.015	3.6	0.003	0.003	0.004	0.003	0.003
02.541	0.027	3.2	0.006	0.006	0.006	0.006	0.006
02.542	0.036	0.0	0.007	0.007	0.007	0.007	0.007
02.543	0.010	8.4	0.002	0.002	0.002	0.002	0.002
02.544	0.016	4.8	0.004	0.004	0.004	0.003	0.003
02.544.1	1.004	98.8	0.174	0.174	0.174	0.175	0.175
02.544.1	1.005	0.2	0.174	0.175	0.174	0.174	0.174
02.551	0.022	1.8	0.005	0.005	0.005	0.005	0.005
02.552	0.011	12.9	0.002	0.002	0.003	0.003	0.003
02.553	0.010	7.3	0.002	0.003	0.002	0.002	0.002
02.554	0.023	5.8	0.005	0.005	0.005	0.005	0.005
02.555	0.048	0.7	0.009	0.009	0.009	0.009	0.009
02.556	0.030	2.2	0.006	0.006	0.006	0.006	0.006
02.557	0.019	9.1	0.004	0.004	0.004	0.005	0.005
02.558	0.027	2.3	0.006	0.006	0.006	0.006	0.006
02.559	0.019	0.0	0.004	0.004	0.004	0.004	0.004
02.560	0.018	0.0	0.004	0.004	0.004	0.004	0.004
02.561	0.005	11.0	0.001	0.001	0.001	0.001	0.001
02.562	0.018	8.9	0.004	0.004	0.004	0.004	0.004
02.562.1	0.728	71.0	0.144	0.144	0.144	0.144	0.144
02.562.1	0.745	0.8	0.146	0.145	0.146	0.148	0.148
02.563	0.020	0.0	0.004	0.004	0.005	0.004	0.004
0 02.28	0.002	25.0	0.000	0.001	0.000	0.000	0.000
02.234	0.003	32.1	0.001	0.001	0.001	0.001	0.001
02.234.1	1.044	104.1	0.1	0.182	0.182	0.181	0.181
02.234.1	1.059	0.4	0.184	0.185	0.185	0.183	0.183
02.572	0.007	8.2	0.002	0.002	0.001	0.002	0.002
0	-0.000	0.0	-0.000	-0.000	-0.000	-0.000	-0.000
1.00	0.926	0.3	0.167	0.166	0.167	0.167	0.167

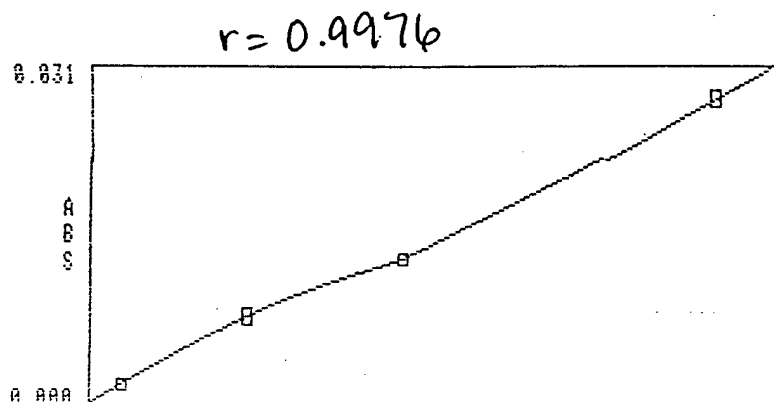
.3346  
4.870 mg/kg0.438  
0.441  
0.327  
0.465  
0.568  
0.504  
0.864  
0.262  
0.510  
0.343  
0.343  
0.577  
0.773  
0.221  
0.369  
0.732  
0.706  
0.502  
0.256  
0.238  
0.513  
0.956  
0.502  
0.363  
0.584  
0.361  
0.353  
0.909  
0.329  
15.104  
14.782  
0.400



PROGRAM 20 T1

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	276.8
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

BLANK	0.000	0.003	0.004	0.003	0.003
BLANK	0.000	0.001	0.001	0.001	0.001
STANDARD 1	0.100	9.9	0.002	0.002	0.002
STANDARD 2	0.500	5.8	0.008	0.008	0.008
STANDARD 3	1.000	2.5	0.013	0.013	0.014
STANDARD 4	2.000	1.7	0.028	0.028	0.029



T1  
flame  
03/09/94  
0900  
LAC



0 03.01	0.029	11.2	0.001	0.000	0.001	0.001	
0.500	0.492	1.5	0.008	0.008	0.008	0.008	
02.531	0.322	6.7	0.005	0.005	0.005	0.006	5.985 mg/kg
02.532	0.200	4.9	0.004	0.003	0.004	0.004	4.167
02.533	0.196	2.5	0.003	0.003	0.004	0.004	4.118
02.534	0.305	7.4	0.005	0.005	0.005	0.006	5.546
02.534.1	1.186	0.7	0.016	0.016	0.016	0.016	25.895
02.534.1	1.228	0.4	0.016	0.016	0.016	0.016	27.658
02.535	0.175	3.3	0.003	0.003	0.003	0.003	3.265
02.536	0.233	0.0	0.004	0.004	0.004	0.004	5.296
02.537	0.231	6.7	0.004	0.004	0.004	0.004	5.044
02.538	0.234	29.1	0.004	0.005	0.005	0.003	4.588
02.539	0.323	3.7	0.005	0.005	0.006	0.005	5.278
02.540	0.339	5.6	0.006	0.006	0.006	0.006	7.740
02.541	0.206	10.4	0.004	0.003	0.004	0.004	4.402
02.542	0.284	4.7	0.005	0.005	0.005	0.005	6.094
02.543	0.143	5.3	0.003	0.003	0.002	0.003	3.164
02.544	0.260	2.3	0.005	0.005	0.005	0.004	5.991
02.544.1	1.296	1.1	0.017	0.017	0.017	0.018	28.052
02.544.1	1.325	1.1	0.018	0.018	0.018	0.018	25.980
02.551	0.155	4.3	0.003	0.003	0.003	0.003	3.539
02.552	0.112	5.1	0.002	0.002	0.002	0.002	2.605
02.553	0.108	6.2	0.002	0.002	0.002	0.002	2.571
02.554	0.198	3.0	0.004	0.003	0.004	0.004	4.420
02.555	0.281	4.4	0.005	0.005	0.005	0.005	5.598
02.556	0.300	1.2	0.005	0.005	0.005	0.005	5.017
02.557	0.270	1.8	0.005	0.005	0.005	0.005	5.153
02.558	0.358	4.5	0.006	0.006	0.006	0.006	7.749
02.559	0.351	3.4	0.006	0.006	0.006	0.006	6.673
02.560	0.161	6.6	0.003	0.003	0.003	0.003	3.098
02.561	0.158	6.4	0.003	0.003	0.003	0.003	2.873
02.562	0.192	5.3	0.003	0.003	0.004	0.003	3.504
02.562.1	1.103	1.3	0.015	0.015	0.014	0.015	22.884
02.562.1	1.141	0.6	0.015	0.015	0.015	0.015	22.639
02.563	0.260	6.7	0.005	0.004	0.005	0.005	5.200
0 02.28	0.028	79.1	0.001	0.000	0.000	0.001	
02.234	0.089	7.4	0.002	0.002	0.002	0.002	
02.234.1	1.010	0.6	0.013	0.013	0.013	0.013	
02.234.1	1.016	0.5	0.013	0.013	0.013	0.014	
02.572	0.111	14.6	0.002	0.002	0.002	0.002	
0	-0.020	72.7	-0.000	-0.000	-0.001	-0.000	
1.00	0.724	3.9	0.011	0.010	0.011	0.011	
0 03.07	0.047	18.6	0.001	0.001	0.001	0.001	
03.103	0.057	52.2	0.001	0.000	0.001	0.001	
03.103.1	0.802	0.0	0.011	0.011	0.011	0.011	
03.103.1	0.833	2.3	0.012	0.011	0.012	0.012	
03.094	0.132	7.1	0.002	0.002	0.002	0.003	

88.19%

102.99%

91.19%

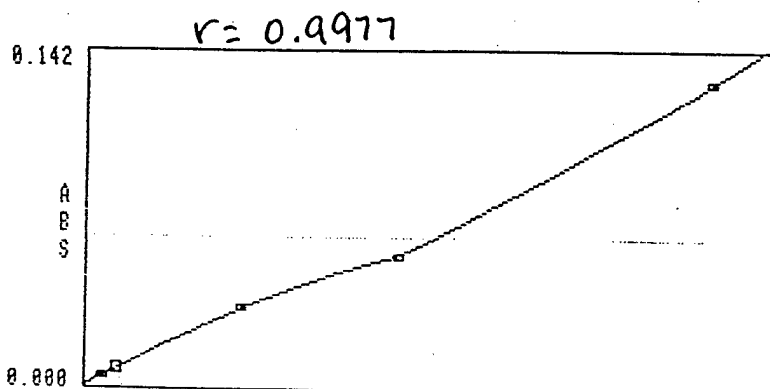
74.59%



PROGRAM 20 Ni

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	232.0
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

S	PLE	CONC	ZRSD	MEAN ABS	READINGS	
B	NK	0.000		0.068	0.068	0.068
B	LANK	0.000		-0.000	-0.000	0.000
S	TANDARD 1	0.050	10.9	0.005	0.004	0.005
S	TANDARD 2	0.100	8.0	0.008	0.008	0.008
S	TANDARD 3	0.500	1.2	0.035	0.035	0.036
S	TANDARD 4	1.000	0.9	0.058	0.057	0.058
S	TANDARD 5	2.000	0.2	0.129	0.129	0.129



Ni  
flame  
03/08/94  
1500  
LAC





0 03.01	0.015	17.4	0.001	0.001	0.002	0.001	
0.100	0.102	4.0	0.008	0.008	0.007	0.008	
<del>02.531</del>	<del>0.427</del>	<del>1.1</del>	<del>0.030</del>	<del>0.031</del>	<del>0.030</del>	<del>0.030</del>	<del>7.937 mg/kg</del>
<del>02.532</del>	<del>0.276</del>	<del>0.0</del>	<del>0.020</del>	<del>0.020</del>	<del>0.020</del>	<del>0.020</del>	<del>5.750</del>
<del>02.533</del>	<del>0.296</del>	<del>2.2</del>	<del>0.022</del>	<del>0.021</del>	<del>0.022</del>	<del>0.021</del>	
02.534	0.355	1.1	0.026	0.025	0.026	0.025	6.455
02.534.1	1.340	0.3	0.080	0.080	0.080	0.080	29.258
02.534.1	1.394	0.3	0.084	0.084	0.083	0.084	31.396
02.535	0.966	0.4	0.056	0.057	0.056	0.056	18.022
02.536	1.032	0.3	0.060	0.060	0.059	0.060	23.455
02.537	0.360	2.8	0.026	0.026	0.025	0.027	7.860
02.538	0.687	0.7	0.045	0.045	0.045	0.045	13.471
02.539	0.390	0.2	0.028	0.028	0.028	0.028	6.373
02.540	0.309	1.0	0.022	0.022	0.023	0.022	7.055
02.541	0.696	0.1	0.045	0.045	0.045	0.045	14.872
02.542	1.128	0.7	0.066	0.066	0.065	0.066	24.206
02.543	0.152	2.6	0.011	0.011	0.012	0.011	3.363
02.544	0.374	1.2	0.027	0.027	0.027	0.027	8.618
02.544.1	1.555	0.6	0.095	0.095	0.095	0.096	33.658
02.544.1	1.556	0.3	0.095	0.095	0.096	0.095	30.510
02.551	0.601	0.7	0.041	0.040	0.041	0.041	13.722
02.552	0.175	0.7	0.013	0.013	0.013	0.013	4.070
02.553	0.155	3.6	0.012	0.012	0.011	0.012	3.691
02.554	0.397	1.0	0.028	0.029	0.028	0.028	8.862
02.555	0.442	1.2	0.031	0.032	0.032	0.031	8.805
02.556	0.721	0.5	0.047	0.046	0.047	0.047	12.057
02.557	0.427	0.2	0.030	0.030	0.030	0.030	8.149
02.558	0.447	1.5	0.032	0.032	0.032	0.031	9.675
02.559	0.446	1.8	0.032	0.031	0.032	0.031	8.479
02.560	0.444	2.0	0.031	0.031	0.032	0.032	8.706
02.561	0.264	2.7	0.019	0.019	0.019	0.020	4.800
02.562	0.559	1.2	0.038	0.039	0.038	0.038	10.201
02.562.1	1.547	0.1	0.095	0.095	0.095	0.095	32.095
02.562.1	1.552	0.3	0.095	0.095	0.095	0.095	30.794
02.563	0.566	0.7	0.039	0.039	0.039	0.039	11.320
0 02.28	-0.004	99.9	-0.000	-0.001	-0.001	0.001	
02.234	<u>0.035</u>	5.8	0.003	0.003	0.003	0.003	107.570
02.234.1	1.110	0.6	0.065	0.065	0.064	0.065	
02.234.1	1.118	0.4	0.065	0.065	0.065	0.065	
02.572	<u>0.012</u>	38.9	0.001	0.001	0.002	0.001	
0	-0.002	99.9	-0.000	0.000	-0.001	-0.000	
1.00	0.994	0.8	0.057	0.057	0.058	0.057	
0 03.07	0.013	33.1	0.001	0.001	0.002	0.001	
03.103	<u>0.021</u>	19.3	0.002	0.002	0.002	0.002	
03.103.1	1.081	0.7	0.063	0.062	0.063	0.063	106.070
03.103.1	1.081	0.3	0.063	0.063	0.063	0.063	
03.054	<u>0.021</u>	23.3	0.002	0.002	0.002	0.001	
03.094	<u>0.126</u>	2.9	0.010	0.010	0.009	0.009	
03.117	<u>0.027</u>	9.2	0.002	0.003	0.002	0.003	

7.937 mg/kg  
5.750  
6.219

Sorry!

98.570

118.190

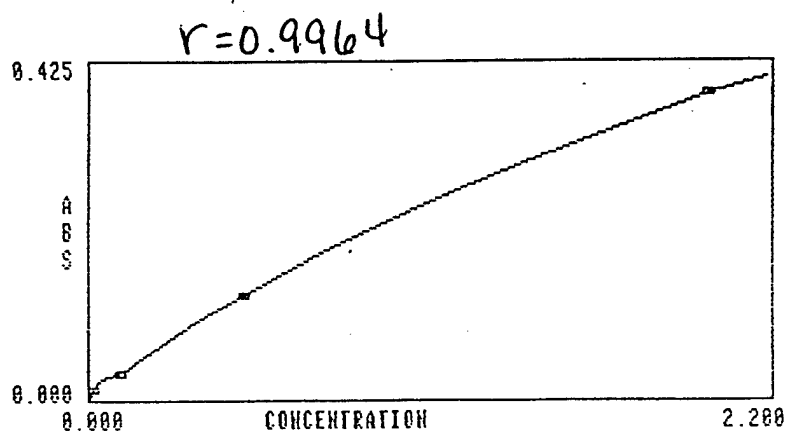
98.870



PROGRAM 20 Zn

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	5
SLIT WIDTH (nm)	1.0
WAVELENGTH (nm)	213.9
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

K	0.000	0.001	0.001	0.002	0.001
STANDARD 1	0.010	8.6	0.011	0.012	0.010
STANDARD 2	0.100	0.5	0.032	0.032	0.032
STANDARD 3	0.500	0.1	0.134	0.134	0.133
STANDARD 4	2.000	0.4	0.386	0.387	0.387



Zn  
flame  
03/08/94  
0800  
LAC



-0 03.01	0.010	0.6	0.010	0.010	0.010	0.010	
0.100	0.105	1.5	0.033	0.034	0.033	0.033	
02.531	1.577	0.3	0.323	0.324	0.323	0.322	29.312 mg/kg
02.532	1.080	0.5	0.244	0.243	0.245	0.243	22.500
02.533	1.091	0.5	0.246	0.247	0.245	0.245	22.920
02.534	1.417	0.4	0.299	0.299	0.297	0.300	25.760
02.534.1	2.105	0.3	0.399	0.398	0.399	0.400	68.870 45.961
02.534.1	2.112	0.1	0.400	0.399	0.400	0.400	47.567

02.535	OVER	0.2	0.481	0.481	0.480	0.482	
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02.536	OVER	0.2	0.475	0.475	0.476	0.497	
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02.537	1.249	0.3	0.272	0.272	0.271	0.273	27.271
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02.538	OVER	0.2	0.535	0.536	0.533	0.535	
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02.539	1.553	0.3	0.320	0.320	0.318	0.320	25.376
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02.540	1.179	0.3	0.261	0.260	0.261	0.261	26.918
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02.541	OVER	0.1	0.680	0.681	0.680	0.679	
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02.542	OVER	0.2	0.527	0.527	0.528	0.526	
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02.543	1.744	0.4	0.348	0.349	0.347	0.349	38.584
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02.544	1.868	0.2	0.367	0.367	0.366	0.367	68.870 43.042
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02.544.1	OVER	0.2	0.553	0.553	0.552	0.554	
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02.544.1	OVER	0.5	0.567	0.565	0.570	0.567	
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02.551	1.741	0.4	0.348	0.346	0.349	0.348	39.749
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02.552	0.447	0.8	0.122	0.123	0.122	0.121	10.395
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02.553	OVER	0.4	0.436	0.434	0.437	0.436	
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02.554	1.742	0.4	0.348	0.349	0.347	0.347	38.884
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02.555	OVER	0.1	0.615	0.615	0.615	0.616	
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02.556	OVER	0.3	0.451	0.450	0.450	0.433	
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02.557	1.595	0.1	0.326	0.326	0.326	0.326	30.439
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02.558	1.785	0.2	0.354	0.355	0.354	0.354	38.636
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02.559	1.915	0.3	0.374	0.373	0.375	0.373	36.407
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02.560	1.314	0.4	0.282	0.281	0.282	0.284	25.765
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02.561	0.929	0.3	0.218	0.218	0.218	0.217	16.891
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02.562	OVER	0.1	0.867	0.868	0.868	0.866	
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02.562.1	OVER	0.1	0.843	0.844	0.843	0.846	
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02.562.1	OVER	0.1	0.873	0.873	0.876	0.875	
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02.563	OVER	0.1	0.816	0.816	0.817	0.815	
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02.535 '12	1.655	1.3	0.335	0.332	0.332	0.340	3.3100
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02.536 '12	1.644	0.5	0.333	0.332	0.333	0.335	3.2800
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02.538 '12	1.921	0.2	0.375	0.375	0.374	0.375	3.8420
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02.541 '110	0.755	6.1	0.186	0.177	0.182	0.199	7.5500
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02.542 '110	0.464	9.7	0.126	0.118	0.120	0.140	4.6400
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02.544.1 '14	0.639	0.3	0.163	0.163	0.162	0.163	2.5560
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02.544.1 '14	0.647	0.7	0.164	0.164	0.164	0.166	2.5880
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02.553 '110	0.604	0.9	0.156	0.154	0.157	0.156	6.0400
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02.555 '110	0.787	1.1	0.192	0.189	0.193	0.193	7.8700
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02.556 '110	0.523	1.5	0.139	0.137	0.138	0.141	5.2300
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02.562 '120	1.472	0.5	0.307	0.309	0.306	0.306	29.4400
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02.562.1 '120	1.533	0.3	0.316	0.317	0.316	0.316	30.6600
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02.562.1 '120	1.516	0.6	0.314	0.315	0.312	0.315	30.3200
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02.563 '120	1.041	1.7	0.237	0.239	0.241	0.233	20.8200
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0 02.28	0.007	3.5	0.008	0.008	0.008	0.008	
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02.234	0.178	0.5	0.055	0.054	0.055	0.055	
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02.234.1	1.211	0.2	0.266	0.266	0.265	0.266	
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02.234.1	1.208	0.8	0.265	0.267	0.263	0.266	
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02.572	0.105	2.0	0.033	0.034	0.033	0.033	
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0	0.007	5.3	0.008	0.008	0.008	0.007	
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1.00	1.080	0.4	0.244	0.244	0.245	0.243	
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0 03.07	0.042	1.3	0.024	0.025	0.024	0.024	
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03.103	0.017	1.0	0.016	0.016	0.015	0.016	101.870
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03.103.1	1.035	0.3	0.236	0.236	0.236	0.237	
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03.103.1	1.029	0.4	0.235	0.235	0.236	0.235	
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61.754 mg/kg

74.546

75.333

161.325

99.571

55.325

50.157

143.810

156.773

87.458

537.226

636.110

601.587

416.400

12290



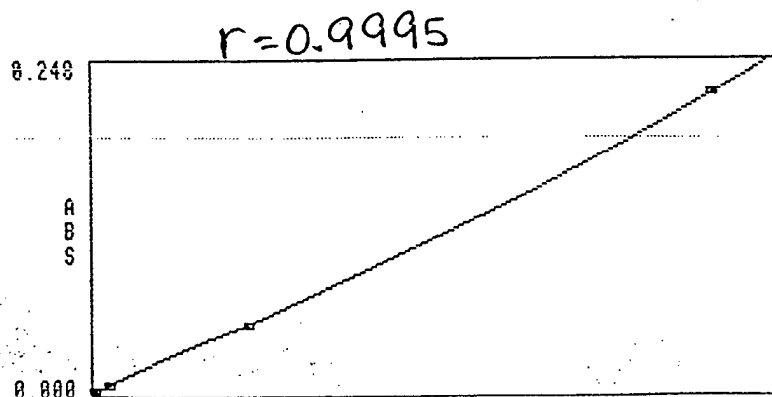
SAMPLE	CONC	ZRSD	MEAN ABS	READINGS		
03.094	<u>0.038</u>	1.9	0.023	0.024	0.023	0.023
03.114	<u>0.206</u>	0.8	0.062	0.063	0.062	0.062
03.116	<u>0.639</u>	1.0	0.163	0.161	0.163	0.165
03.117	<u>0.164</u>	0.8	0.051	0.051	0.051	0.050



PROGRAM 20 Cu

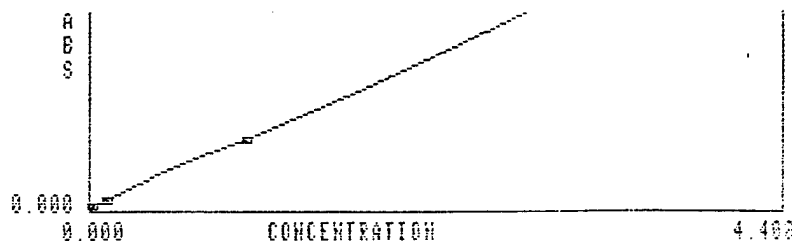
INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	324.8
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

LE	CONC	ZRSD	MEAN ABS	READINGS		
	0.000		0.194	0.194	0.193	0.193
	<del>0.000</del>		<del>-0.001</del>	<del>-0.001</del>	<del>-0.000</del>	<del>-0.001</del>
ARD 1	0.010	27.3	0.000	0.001	0.000	0.000
	0.000		-0.071	-0.071	-0.071	-0.071
	0.000		-0.000	-0.001	-0.000	-0.000
	0.000		-0.056	-0.056	-0.056	-0.056
	0.000		-0.000	-0.000	-0.000	-0.000
ARD 1	0.010	7.2	0.001	0.002	0.001	0.001
ARD 2	0.100	4.1	0.006	0.006	0.006	0.006
ARD 3	1.000	0.2	0.050	0.050	0.050	0.050
ARD 4	4.000	0.4	0.225	0.224	0.225	0.226



Cu  
flame  
03/08/94  
1530  
LAC





0 03.01	-0.006	12.5	-0.001	-0.001	-0.001	-0.001	
<del>2.167</del> 0.050	0.046	0.0	0.004	0.004	0.004	0.004	
02.531	1.026	0.4	0.052	0.051	0.052	0.052	19.071 mg/kg
02.532	0.729	2.5	0.038	0.038	0.039	0.037	15.188
02.533	1.040	1.6	0.052	0.052	0.053	0.052	21.849
02.534	0.320	0.7	0.018	0.018	0.018	0.018	5.818
02.534.1	1.298	0.5	0.066	0.066	0.066	0.067	28.341
02.534.1	1.302	0.5	0.066	0.067	0.066	0.066	29.324
02.535	0.826	0.3	0.043	0.043	0.043	0.043	15.410
02.536	1.033	0.5	0.052	0.052	0.052	0.052	23.477
02.537	0.421	1.0	0.023	0.024	0.023	0.023	9.192
02.538	0.740	0.6	0.039	0.039	0.039	0.039	14.510
02.539	0.376	0.0	0.021	0.021	0.021	0.021	6.144
02.540	0.235	0.0	0.014	0.013	0.014	0.014	5.365
02.541	1.254	0.1	0.064	0.064	0.064	0.064	26.795
02.542	0.949	0.4	0.048	0.048	0.048	0.048	20.365
02.543	0.473	1.1	0.026	0.026	0.026	0.026	10.465
02.544	0.236	1.8	0.014	0.014	0.014	0.013	5.438
02.544.1	1.552	0.1	0.080	0.080	0.080	0.080	35.760
02.544.1	1.557	0.5	0.080	0.080	0.080	0.080	30.529
02.551	0.441	0.9	0.024	0.024	0.025	0.024	10.069
02.552	0.269	0.9	0.015	0.015	0.016	0.015	6.256
02.553	1.100	0.5	0.056	0.055	0.056	0.056	26.191
02.554	0.527	0.3	0.029	0.029	0.029	0.029	11.763
02.555	0.546	0.0	0.030	0.030	0.030	0.030	10.877
02.556	0.622	0.6	0.033	0.033	0.033	0.033	10.401
02.557	0.332	0.0	0.019	0.019	0.019	0.019	6.336
02.558	1.087	0.6	0.055	0.055	0.055	0.055	23.528
02.559	0.476	0.6	0.026	0.026	0.026	0.026	9.010
02.560	0.276	1.3	0.016	0.016	0.016	0.016	5.412
02.561	0.561	0.4	0.030	0.030	0.030	0.031	10.237
02.562	2.217	0.4	0.117	0.116	0.117	0.117	40.456
02.562.1	3.434	0.2	0.189	0.190	0.189	0.189	71.245
02.562.1	3.452	0.2	0.190	0.190	0.190	0.191	68.492
02.563	1.171	0.3	0.059	0.059	0.059	0.059	23.420
0 02.28	-0.042	4.1	-0.006	-0.006	-0.006	-0.006	
02.234	-0.011	0.0	-0.002	-0.002	-0.002	-0.002	20.010
02.234.1	1.043	0.5	0.053	0.052	0.053	0.053	104.370
02.234.1	1.044	0.7	0.053	0.053	0.052	0.053	
02.572	-0.029	0.0	-0.004	-0.004	-0.004	-0.004	20.010
0	-0.042	1.0	-0.006	-0.006	-0.006	-0.006	
1.00	0.862	0.9	0.044	0.045	0.044	0.044	
0 03.07	-0.037	4.8	-0.005	-0.005	-0.006	-0.005	
03.103	-0.034	0.0	-0.005	-0.005	-0.005	-0.005	99.570
03.103.1	0.995	0.7	0.050	0.050	0.050	0.051	
03.103.1	1.007	0.2	0.051	0.051	0.051	0.051	
03.054	-0.021	0.0	-0.003	-0.003	-0.003	-0.003	20.010
03.094	-0.034	0.0	-0.005	-0.005	-0.005	-0.005	20.010
03.114	-0.026	2.3	-0.004	-0.004	-0.004	-0.004	20.010

99.670

131.670

121.770

104.370

99.570



# Varian SpectrAA 10/20 System Report

OPERATOR 001  
DATE 03.09.94  
BATCH 1

PROGRAM 2 Cu

INSTRUMENT MODE ABSORBANCE  
CALIBRATION MODE CONCENTRATION  
MEASUREMENT MODE PEAK HEIGHT  
LAMP CURRENT (mA) 4  
SLIT WIDTH (nm) 0.5  
WAVELENGTH (nm) 324.8  
SAMPLE INTRODUCTION SAMPLER AUTOMIXING  
TIME CONSTANT 0.05  
MEASUREMENT TIME (sec) 1.0  
REPLICATES 2  
BACKGROUND CORRECTION OFF

## FURNACE PARAMETERS

P	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
	120	3.0	3.0	NORMAL	NO
	120	2.0	3.0	NORMAL	NO
3	400	2.0	3.0	NORMAL	NO
4	400	2.0	0.0	NORMAL	NO
	600	1.0	0.0	NORMAL	NO
5	900	2.0	0.0	NORMAL	NO
7	900	2.0	3.0	NORMAL	NO
	2300	1.0	0.0	NORMAL	YES
	2300	1.0	0.0	NORMAL	YES
10	2300	1.0	3.0	NORMAL	NO

Cu  
furnace  
03/09/94  
1700  
LAC

## SAMPLER PARAMETERS

VOLUMES (uL)  
SOLUTION BLANK MODIFIER

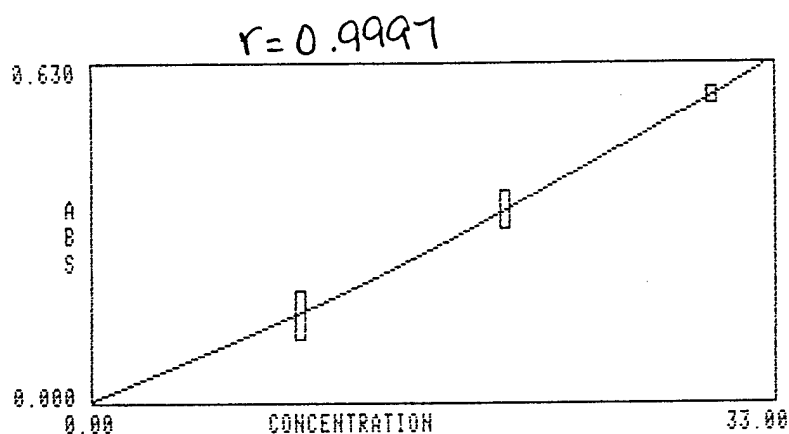
ANK	--	20
ANDARD 1	4	16
TANDARD 2	8	12
TANDARD 3	12	8
PLE	20	0

RECALIBRATION RATE 0  
RESLOPE RATE 0

TIPLE INJECT NO HOT INJECT YES PRE INJECT NO  
TEMPERATURE 100  
INJECT RATE 2



SAMPLE	CONC	%RSD	MEAN ABS	READINGS	
BLANK	0.00		0.019	0.026	0.012
BLANK	0.00		-0.001	-0.008	0.006
STANDARD 1	10.00	26.0	0.165	0.195	0.135
STANDARD 2	20.00	9.1	0.360	0.337	0.383
STANDARD 3	30.00	2.1	0.572	0.564	0.581



0 03.01	4.42	22.7	0.073	0.085	0.061
25.00	23.03	3.1	0.424	0.414	0.433
02.234	OVER	1.7	0.775	0.804	0.785
02.234.1	14.00	0.5	0.239	0.238	0.240
02.234.1	12.73	9.4	0.215	0.201	0.229
02.572	10.71	7.0	0.178	0.186	0.169
02.157	10.76	3.1	0.179	0.183	0.175
02.054	23.10	17.1	0.425	0.476	0.374
02.117	18.05	15.7	0.319	0.284	0.355
0	0.12	10.3	0.002	0.002	0.002

~~234.15~~ 8.86 1.6 0.146 0.148 0.145  
~~234.12~~ 16.95 11.7 0.297 0.301 0.293

*reran 1 diluted*

1.400  
 1.273  
 0.0171  
 0.0176  
 0.0231  
 0.0181

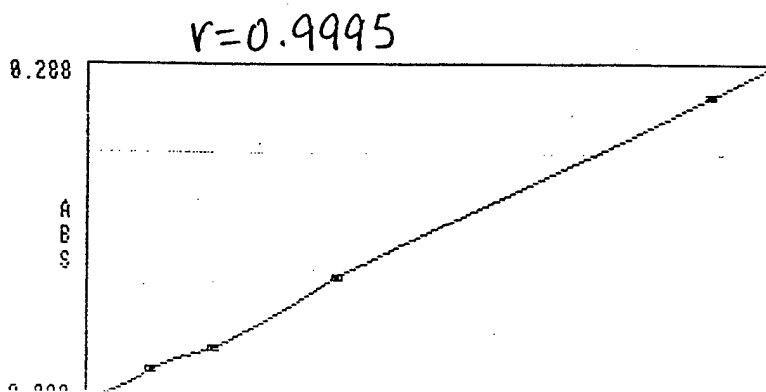
0.0339 123.9%



PROGRAM 20 Cr

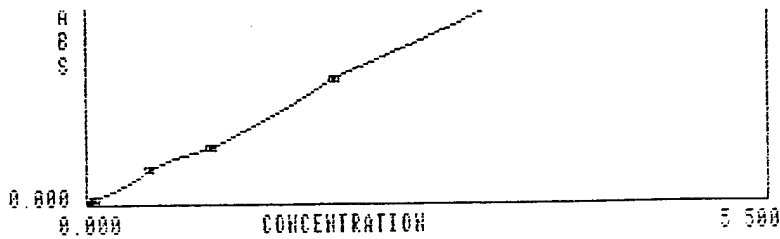
INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	7
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	357.9
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

SAMPLE	CONC	ZRSD	MEAN ABS	READINGS		
ANK	0.000		0.032	0.031	0.032	0.032
ANK	0.000		-0.001	-0.001	-0.001	-0.001
STANDARD 1	0.050	12.5	0.002	0.002	0.002	0.002
STANDARD 2	0.500	0.5	0.027	0.027	0.027	0.027
STANDARD 3	1.000	1.4	0.046	0.047	0.045	0.045
STANDARD 4	2.000	0.4	0.107	0.107	0.106	0.107
STANDARD 5	5.000	0.3	0.261	0.262	0.261	0.261



Cr  
flame  
03/09/94  
0930  
LAE





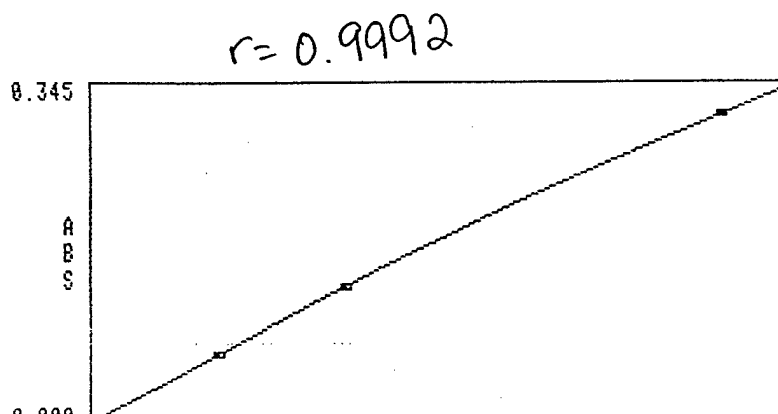
0 03.01	-0.020	23.4	-0.001	-0.001	-0.001	-0.001	
0.500	0.478	0.3	0.025	0.025	0.025	0.026	
02.531	0.951	3.0	0.044	0.045	0.045	0.043	17.677 mg/kg
02.532	1.331	1.6	0.064	0.065	0.064	0.063	27.729
02.533	0.333	3.2	0.016	0.016	0.016	0.017	6.933
02.534	0.524	0.6	0.028	0.028	0.028	0.028	9.527
02.534.1	1.414	1.0	0.069	0.068	0.069	0.069	30.873
02.534.1	1.425	0.2	0.069	0.070	0.069	0.070	32.095
02.535	0.795	1.1	0.040	0.040	0.040	0.039	14.832
02.536	0.717	1.2	0.037	0.037	0.037	0.036	16.310
02.537	0.391	1.9	0.020	0.019	0.020	0.020	8.612
02.538	0.728	0.3	0.037	0.037	0.037	0.037	14.275
02.539	0.685	0.3	0.036	0.036	0.035	0.036	11.193
02.540	0.508	0.0	0.027	0.027	0.027	0.027	11.600
02.541	1.059	0.8	0.049	0.049	0.048	0.049	22.628
02.542	1.029	0.9	0.047	0.047	0.048	0.047	22.082
02.543	0.121	2.3	0.005	0.005	0.005	0.005	2.677
02.544	1.029	1.3	0.047	0.047	0.048	0.048	23.710
02.544.1	1.890	0.5	0.099	0.099	0.099	0.099	40.909
02.544.1	1.897	0.1	0.100	0.100	0.099	0.100	37.196
02.551	0.567	0.7	0.030	0.030	0.030	0.031	12.945
02.552	0.382	1.2	0.019	0.019	0.019	0.019	8.884
02.553	0.182	2.5	0.008	0.008	0.008	0.008	4.333
02.554	0.530	0.5	0.028	0.028	0.029	0.028	11.830
02.555	0.506	0.7	0.027	0.027	0.027	0.027	10.080
02.556	0.654	0.8	0.034	0.034	0.034	0.035	10.937
02.557	0.457	1.1	0.024	0.024	0.024	0.024	8.721
02.558	0.687	0.7	0.036	0.036	0.036	0.035	14.871
02.559	0.607	1.1	0.032	0.032	0.032	0.032	11.540
02.560	0.536	0.6	0.029	0.029	0.029	0.029	10.510
02.561	0.316	1.5	0.015	0.015	0.015	0.016	5.746
02.562	1.134	0.6	0.053	0.053	0.053	0.053	20.693
02.562.1	1.975	0.8	0.105	0.104	0.105	0.106	40.975
02.562.1	1.987	0.7	0.106	0.107	0.105	0.105	39.425
02.563	3.354	0.3	0.177	0.177	0.177	0.178	67.080
0 02.28	0.042	11.9	0.002	0.002	0.002	0.002	
02.234	0.085	2.4	0.004	0.004	0.004	0.004	
02.234.1	1.126	0.7	0.053	0.053	0.052	0.053	
02.234.1	1.135	0.5	0.053	0.053	0.053	0.053	
02.572	0.087	5.4	0.004	0.004	0.004	0.004	
0	-0.012	55.9	-0.000	-0.000	-0.001	-0.001	
1.00	0.813	0.7	0.040	0.040	0.040	0.041	



PROGRAM 20 Ag

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	INTEGRATION
LAMP CURRENT (mA)	4
SLIT WIDTH (nm)	0.5
WAVELENGTH (nm)	328.1
FLAME	AIR-ACETYLENE
SAMPLE INTRODUCTION	MANUAL
DELAY TIME	2
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	2.0
REPLICATES	3
BACKGROUND CORRECTION	OFF

BLANK	0.000		0.001	0.001	0.001	0.001
STANDARD 1	0.010	30.8	0.001	0.001	0.000	0.000
STANDARD 2	0.050	3.2	0.003	0.003	0.003	0.003
STANDARD 3	1.000	0.6	0.070	0.070	0.070	0.070
STANDARD 4	2.000	0.4	0.137	0.136	0.137	0.137
STANDARD 5	5.000	0.3	0.314	0.315	0.314	0.313



Ag  
flame  
03/12/94  
1600  
LAC



0.000  
0.000

CONCENTRATION

5.500

0.03.01	0.003	0.0	0.000	0.000	0.000	0.000	mg/kg
0.500	0.514	0.9	0.035	0.035	0.035	0.034	
02.531	0.028	0.0	0.002	0.002	0.002	0.002	0.520
02.532	0.034	7.1	0.002	0.002	0.002	0.002	0.708
02.533	0.016	0.0	0.001	0.001	0.001	0.001	0.336
02.534	0.031	0.0	0.002	0.002	0.002	0.002	0.564
02.534.1	1.000	0.2	0.070	0.070	0.070	0.070	21.834
02.534.1	0.997	0.5	0.070	0.070	0.069	0.070	22.455
02.535	0.028	5.1	0.002	0.002	0.002	0.002	0.522
02.536	0.029	0.0	0.002	0.002	0.002	0.002	0.659
02.537	0.018	10.2	0.001	0.001	0.001	0.001	0.393
02.538	0.025	0.0	0.001	0.002	0.001	0.001	0.490
02.539	0.026	0.0	0.002	0.002	0.001	0.002	0.425
02.540	0.023	9.2	0.001	0.001	0.001	0.001	0.525
02.541	0.028	12.7	0.002	0.001	0.002	0.002	0.598
02.542	0.034	2.9	0.002	0.002	0.002	0.002	0.730
02.543	0.012	22.3	0.001	0.001	0.001	0.001	0.266
02.544	0.024	6.1	0.001	0.001	0.001	0.001	0.553
02.544.1	1.000	0.2	0.070	0.070	0.070	0.070	21.645
02.544.1	0.998	0.3	0.070	0.070	0.070	0.070	19.569
02.551	0.026	0.0	0.002	0.002	0.001	0.002	0.594
02.552	0.016	6.5	0.001	0.001	0.001	0.001	0.372
02.553	0.015	16.1	0.001	0.001	0.001	0.001	0.357
02.554	0.025	0.0	0.001	0.001	0.002	0.001	0.558
02.555	0.025	4.2	0.001	0.001	0.001	0.002	0.498
02.556	0.028	3.7	0.002	0.002	0.002	0.002	0.558
02.557	0.016	0.0	0.001	0.001	0.001	0.001	0.268
02.558	0.021	0.0	0.001	0.001	0.001	0.001	0.401
02.559	0.024	4.4	0.001	0.001	0.001	0.001	0.520
02.560	0.026	5.6	0.002	0.002	0.001	0.001	0.494
02.561	0.010	0.0	0.001	0.001	0.001	0.001	0.196
02.562	0.021	0.0	0.001	0.001	0.001	0.001	0.383
02.562.1	1.000	0.3	0.070	0.070	0.070	0.070	20.747
02.562.1	0.998	0.4	0.070	0.070	0.070	0.070	19.802
02.563	0.025	0.0	0.001	0.001	0.001	0.001	0.500
0	0.006	24.6	0.000	0.000	0.000	0.000	
2.00	1.950	0.1	0.134	0.134	0.134	0.133	
0.02.28	0.007	0.0	0.000	0.000	0.000	0.000	
0.02.234	0.016	6.6	0.001	0.001	0.001	0.001	
0.02.234.1	1.229	0.4	0.086	0.086	0.085	0.086	
0.02.234.1	1.240	0.2	0.086	0.086	0.086	0.087	
0.02.572	0.022	9.4	0.001	0.001	0.001	0.001	
0	-0.007	36.2	-0.000	-0.000	-0.001	-0.000	
5.0	4.884	0.6	0.308	0.306	0.309	0.309	



STANDARD 2	8	12
STANDARD 3	12	8
SAMPLE	20	0

RECALIBRATION RATE	0
RESLOPE RATE	0

MULTIPLE INJECT	NO	HOT INJECT	NO	PRE INJECT	NO
-----------------	----	------------	----	------------	----

PROGRAM 5 Sb

INSTRUMENT MODE	ABSORBANCE
CALIBRATION MODE	CONCENTRATION
MEASUREMENT MODE	PEAK HEIGHT
LAMP CURRENT (mA)	10
SLIT WIDTH (nm)	0.2
WAVELENGTH (nm)	217.6
SAMPLE INTRODUCTION	SAMPLER AUTOMIXING
TIME CONSTANT	0.05
MEASUREMENT TIME (sec)	1.0
REPLICATES	2
BACKGROUND CORRECTION	OFF

Sb  
furnace  
03/00/94  
1200  
LAC

# FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	85	5.0	3.0	NORMAL	NO
2	95	25.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	1000	2.0	3.0	NORMAL	NO
6	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

# SAMPLER PARAMETERS

VOLUMES (uL)		
SOLUTION	BLANK	MODIFIER



2	75	25.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	1000	2.0	3.0	NORMAL	NO
6	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	
STANDARD 1	4	16	
STANDARD 2	8	12	
STANDARD 3	12	8	
SAMPLE	20	0	

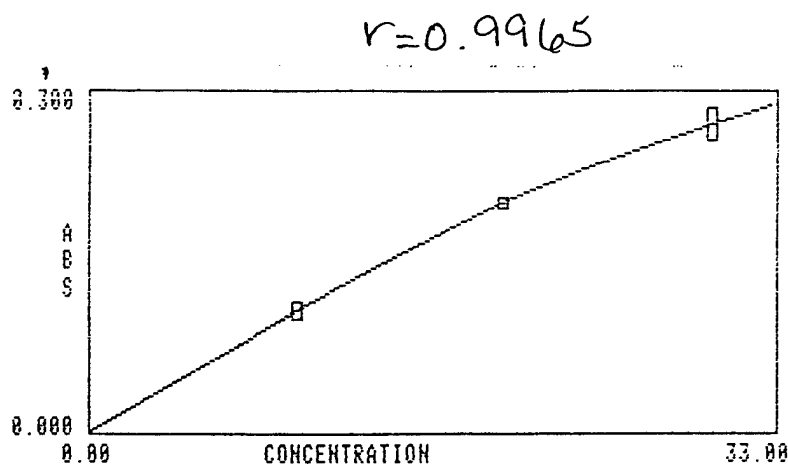
RECALIBRATION RATE 0

RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE	CONC	ZRSD	MEAN ABS	READINGS	
BLANK	0.00		4.000*	4.000*	4.000*
BLANK	0.00		0.017	0.018	0.015
BLANK	0.00		-0.002	-0.003	-0.002
STANDARD 1	10.00	4.7	0.106	0.110	0.102
STANDARD 2	20.00	0.9	0.201	0.203	0.200
STANDARD 3	30.00	4.6	0.272	0.281	0.264





SAMPLE	CONC	ZRSD	MEAN ABS	READINGS
0 03.01	1.21	20.2	0.013	0.011 0.015
25.00	23.64	1.1	0.230	0.232 0.228
<del>02.533 1/25</del>	<del>7.93</del>	<del>7.3</del>	<del>0.084</del>	<del>0.089 0.080</del>
02.537 1/10	10.46	1.2	0.111	0.112 0.110
<del>02.543 1/10</del>	<del>4.44</del>	<del>5.3</del>	<del>0.047</del>	<del>0.045 0.049</del>
02.551 1/10	16.11	3.2	0.165	0.162 0.169
<del>02.555 1/25</del>	<del>8.59</del>	<del>2.9</del>	<del>0.091</del>	<del>0.093 0.089</del>
<del>02.553 1/5</del>	<del>6.79</del>	<del>4.3</del>	<del>0.072</del>	<del>0.074 0.070</del>
<del>02.554 1/25</del>	<del>9.30</del>	<del>9.5</del>	<del>0.099</del>	<del>0.092 0.105</del>
<del>02.555 1/25</del>	<del>8.38</del>	<del>2.5</del>	<del>0.089</del>	<del>0.087 0.090</del>
02.556 1/25	10.66	0.7	0.113	0.113 0.112
02.557 1/10	11.88	1.0	0.125	0.125 0.124
02.562 1/5	16.79	1.2	0.172	0.173 0.170
02.562.1 1/100	10.11	4.3	0.107	0.104 0.110
02.562.1 1/100	9.95	1.3	0.105	0.104 0.106
<del>0 02.28</del>	<del>1.56</del>	<del>16.7</del>	<del>0.016</del>	<del>0.018 0.015</del>
<del>02.234 000</del>	<del>8.01</del>	<del>1.6</del>	<del>0.085</del>	<del>0.086 0.084</del>
02.234.1 1/100	9.71	5.4	0.103	0.099 0.107
02.234.1 1/100	11.50	1.2	0.121	0.122 0.120
<del>02.572 1/5</del>	<del>2.12</del>	<del>7.2</del>	<del>0.022</del>	<del>0.024 0.021</del>
0	1.55	5.4	0.016	0.017 0.016
533 1/10	12.73	3.5	0.133	0.136 0.130
534 1/12	9.78	4.1	0.104	0.107 0.101
565 1/10	14.21	5.6	0.147	0.141 0.153
<del>553 1/12</del>	<del>9.34</del>	<del>4.2</del>	<del>0.099</del>	<del>0.096 0.102</del>
554 1/10	10.46	4.6	0.111	0.107 0.114
<del>555 1/10</del>	<del>12.22</del>	<del>2.3</del>	<del>0.128</del>	<del>0.126 0.130</del>
572	6.77	1.5	0.072	0.072 0.071
553	16.29	1.5	0.167	0.165 0.169
543	15.64	0.4	0.161	0.161 0.160

mg/kg

0.1050

2,293

0.1611

3.678

0.2665

5.319

0.1188

1.987

0.0840  
1.0110

1.430

1.0110  
0.9950

92.770

0.415

93.1070

4805 4  
A 071D

0.9710  
1.1500

1100

0127A

0.1210  
0.0190

0.1420

Q 1050

~~0.1220~~

40.0100

0163

015.64

2.668

0.3456

2.829

2.344

0.1050      2.344  
~~0.1220~~ wrong sample is 02.552% = 2.4%

0.388

0.345



OPERATOR 001  
DATE 03.10.94  
BATCH 1

PROGRAM 5 Sb

INSTRUMENT MODE ABSORBANCE  
CALIBRATION MODE CONCENTRATION  
MEASUREMENT MODE PEAK HEIGHT  
LAMP CURRENT (mA) 10  
SLIT WIDTH (nm) 0.2  
WAVELENGTH (nm) 217.6  
SAMPLE INTRODUCTION SAMPLER AUTOMIXING  
TIME CONSTANT 0.05  
MEASUREMENT TIME (sec) 1.0  
REPLICATES 2  
BACKGROUND CORRECTION OFF

FURNACE PARAMETERS

STEP NO.	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	85	5.0	3.0	NORMAL	NO
2	95	25.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	1000	2.0	3.0	NORMAL	NO
6	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

Sb  
furnace  
03/10/94  
0900  
LAC

SAMPLER PARAMETERS

VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	
STANDARD 1	4	16	
STANDARD 2	8	12	
STANDARD 3	12	8	
SAMPLE	20	0	

RECALIBRATION RATE 0  
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO



# SAMPLER PARAMETERS

VOLUMES (uL)

SOLUTION

BLANK

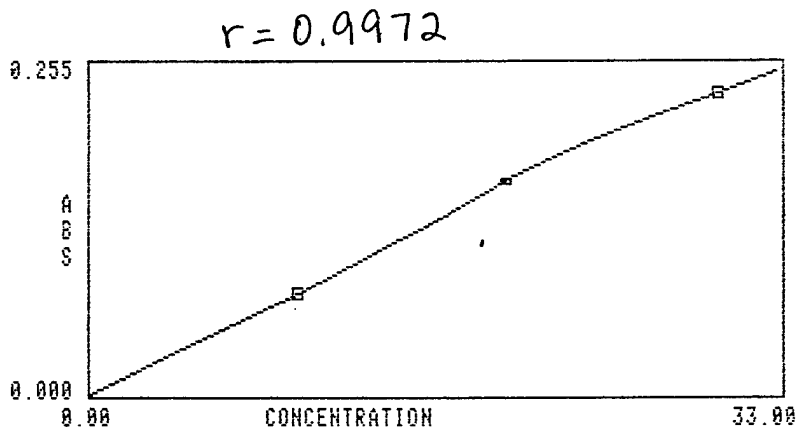
MODIFIER

BLANK	--	20
STANDARD 1	4	16
STANDARD 2	8	12
STANDARD 3	12	8
SAMPLE	20	0

RECALIBRATION RATE 0  
RESLOPE RATE 0

SAMPLE INJECT NO HDT INJECT NO PRE INJECT NO

SAMPLE	CONC	XRSD	MEAN ABS	READINGS	
BLANK	0.00		0.010	0.008	0.012
STANDARD 1	10.00	2.8	0.078	0.076	0.079
STANDARD 2	20.00	0.4	0.165	0.165	0.166
STANDARD 3	30.00	0.5	0.232	0.231	0.233



17.01	3.58	4.8	0.028	0.029	0.027	
25.00	24.33	0.5	0.197	0.197	0.198	
331	OVER	8.2	0.609	0.644	0.573	
332	150	12.62	7.2	0.099	0.094	0.105
333	OVER	4.2	0.613	0.631	0.594	
334	150	10.55	9.8	0.082	0.088	0.076
334.1	6.42	10.8	0.050	0.054	0.046	
334.1	4.73	0.0	0.030	0.038	0.039	
335	150	10.09	2.9	0.078	0.080	0.077
336	150	10.86	2.7	0.085	0.083	0.086

ppm

mg/kg

13.146

11.528

10.261

12.341



02.536	150	10.88	2.7	0.083	0.083	0.083	0.5230
02.537		8.08	1.2	0.063	0.063	0.063	
02.538	150	10.45	3.3	0.081	0.083	0.079	0.5230
02.539	150	13.02	10.4	0.103	0.110	0.095	0.6510
02.540	150	14.33	3.8	0.114	0.111	0.117	0.7170
02.541	150	10.74	1.1	0.084	0.084	0.083	0.5370
02.542		7.58	2.0	0.075	0.078	0.074	
02.543		5.35	5.5	0.041	0.043	0.040	
02.544		8.32	6.0	0.064	0.067	0.062	
02.544.1	100	10.03	4.5	0.078	0.075	0.080	1.0003
02.544.1	110	10.35	5.0	0.080	0.083	0.078	1.0850
02.551		7.56	1.6	0.057	0.057	0.058	
02.552		6.32	0.9	0.047	0.047	0.047	
02.553		5.70	4.3	0.044	0.043	0.046	
02.554		6.96	4.9	0.054	0.056	0.052	
02.555		6.83	4.3	0.053	0.055	0.051	
02.556		7.23	2.5	0.056	0.057	0.055	
02.557		8.37	10.0	0.065	0.066	0.069	
02.558	15	16.39	1.2	0.132	0.131	0.134	0.0820
02.559	15	18.14	0.4	0.148	0.148	0.149	0.0860

12.511  
10.255  
10.637  
16.300  
11.474

21.645  
20.294

1.565  
1.862

SAMPLE	CONC	XRSD	MEAN ABS	READINGS		
02.560	15	20.00	2.4	0.165	0.163	0.168
02.561	15	10.05	3.4	0.078	0.080	0.076
02.562	15	15.44	0.3	0.124	0.124	0.124
02.562.1	100	10.40	7.3	0.081	0.077	0.085
02.562.1	100	10.64	1.3	0.083	0.084	0.082
02.563		7.41	2.6	0.057	0.057	0.056
02.563.1	15	10.65	1.1	0.083	0.082	0.084
02.563.1	150	7.65	0.6	0.059	0.059	0.060
02.564	15	12.39	6.4	0.073	0.076	0.069
02.564.1	15	10.07	2.2	0.078	0.077	0.079
02.564.1	150	9.83	0.8	0.076	0.077	0.076
02.564.2	125	11.28	1.4	0.088	0.089	0.087
02.564.3	125	7.26	3.1	0.056	0.057	0.055
02.564.4	125	10.44	1.7	0.081	0.080	0.082
02.565	125	9.44	3.9	0.073	0.071	0.075
02.565.1	125	7.03	4.4	0.070	0.072	0.069

1.901  
0.980  
1.405  
21.577  
21.111  
9.898  
96.370

32.969  
33.198  
6.052  
6.014  
0.1030  
98.270

keep 0.2365



PROGRAM 5 Sb

INSTRUMENT MODE      ABSORBANCE  
 CALIBRATION MODE    CONCENTRATION  
 MEASUREMENT MODE    PEAK HEIGHT  
 LAMP CURRENT (mA)    10  
 SLIT WIDTH (nm)      0.2  
 WAVELENGTH (nm)     217.6  
 SAMPLE INTRODUCTION   SAMPLER AUTOMIXING  
 TIME CONSTANT        0.05  
 MEASUREMENT TIME (sec) 1.0  
 REPLICATES           2  
 BACKGROUND CORRECTION OFF

Sb  
 furnace  
 03/00/94  
 1200  
 LAC

FURNACE PARAMETERS

TEMP	TEMPERATURE (C)	TIME (sec)	GAS FLOW (L/min)	GAS TYPE	READ COMMAND
1	85	5.0	3.0	NORMAL	NO
2	95	25.0	3.0	NORMAL	NO
3	130	5.0	3.0	NORMAL	NO
4	400	5.0	3.0	NORMAL	NO
5	1000	2.0	3.0	NORMAL	NO
6	1000	2.0	0.0	NORMAL	NO
7	2200	1.0	0.0	NORMAL	YES
8	2200	3.0	0.0	NORMAL	YES
9	2400	1.0	3.0	NORMAL	NO
10	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS

VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
1	--	20	
STANDARD 1	4	16	
STANDARD 2	8	12	
STANDARD 3	12	8	
4	20	0	

RECALIBRATION RATE    0  
 RESLOPE RATE          0



7	2400	1.0	3.0	NORMAL	NO
11	2400	1.0	3.0	NORMAL	NO
12	2700	2.0	3.0	NORMAL	NO

SAMPLER PARAMETERS  
VOLUMES (uL)

	SOLUTION	BLANK	MODIFIER
BLANK	--	20	
STANDARD 1	4	16	
STANDARD 2	8	12	
STANDARD 3	12	8	
SAMPLE	20	0	

RECALIBRATION RATE 0  
RESLOPE RATE 0

MULTIPLE INJECT NO HOT INJECT NO PRE INJECT NO

SAMPLE	CONC	ZRSD	MEAN ABS	READINGS
BLANK	0.00		4.000*	4.000*
BLANK	0.00		0.017	0.018
BLANK	0.00		-0.002	-0.003
STANDARD 1	10.00	4.7	0.106	0.110
STANDARD 2	20.00	0.9	0.201	0.203
STANDARD 3	30.00	4.6	0.272	0.281

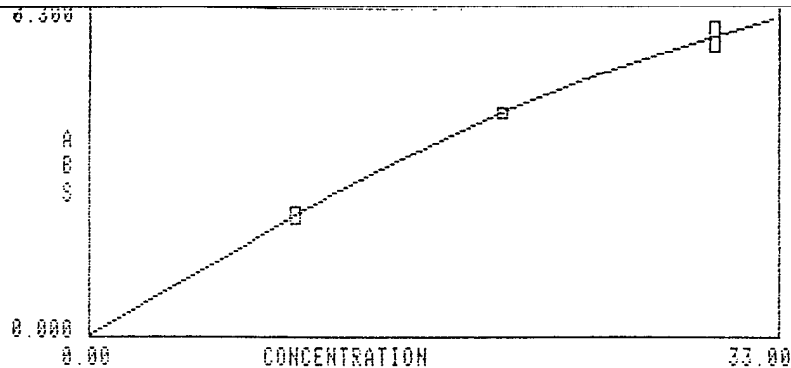
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0.300

A







SAMPLE	CONC	XRSD	MEAN ABS	READINGS
3.01	1.21	20.2	0.013	0.011 0.015
25.00	23.64	1.1	0.230	0.232 0.228
537 '125	7.73	7.3	0.084	0.089 0.080
537 '110	10.46	1.2	0.111	0.112 0.110
537 '110	4.44	5.3	0.047	0.045 0.049
551 '110	16.11	3.2	0.165	0.162 0.169
555 '125	8.57	2.9	0.091	0.093 0.089
553 '15	6.79	4.3	0.072	0.074 0.070
554 '125	9.30	9.5	0.099	0.092 0.105
555 '125	8.38	2.5	0.089	0.087 0.090
556 '125	10.66	0.7	0.113	0.113 0.112
557 '110	11.88	1.0	0.125	0.125 0.124
562 '15	16.79	1.2	0.172	0.173 0.170
562.1 '1100	10.11	4.3	0.107	0.104 0.110
562.1 '1100	9.95	1.3	0.105	0.104 0.106
572	1.56	16.7	0.016	0.018 0.015
234 '1100	8.01	1.5	0.085	0.086 0.084
234.1 '1100	9.71	5.4	0.103	0.099 0.107
234.1 '1100	11.50	1.2	0.121	0.122 0.120
572 '15	2.12	7.2	0.022	0.024 0.021
	1.55	5.4	0.016	0.017 0.016
53 '110	12.73	3.5	0.133	0.136 0.130
54 '12	9.78	4.1	0.104	0.107 0.101
5 '110	14.21	5.6	0.147	0.141 0.153
53 '112	9.34	4.2	0.099	0.096 0.102
554 '110	10.46	4.6	0.111	0.107 0.114
5 '110	12.22	2.3	0.128	0.126 0.130
52	6.77	1.5	0.072	0.072 0.071
53	16.29	1.5	0.167	0.165 0.169
43	15.64	0.4	0.161	0.161 0.160

ppm

mg/kg

0.1050

2.293

3.678

0.1611

5.319

1.987

1.430

92.770

0.2665

0.1188

0.0840

1.0110

0.9950

0.805 40.010

0.9710

1.1500

0.1270

0.0190

0.1420

0.1050

0.1220

40.0100

0.0163

0.0156

93.170

2.668

0.3460

2.829

2.344

wrong sample is 02.552 '110 = 2.440

0.388

0.345



Analyst H2VTime 1300Date 02/28/94

Sample I.D.	543	544	551	552	553	554
Tare Dish 1	28.30-49g	28.66g	28.67g	29.15g	28.75g	29.1887g
Tare Dish 2	30.49g	28.66g	28.67g	29.15g	28.75g	29.1887g
Dish+1stDry	44.38g	60.65g	50.40g	49.90g	47.73g	52.52g
Dish+2ndDry	44.38g	60.65g	50.40g	49.90g	47.73g	52.52g
Volume	47.55g	65.57g	52.96	52.16g	49.49g	57.1971g
% Solids	81.42%	86.67%	89.46%	90.18%	91.51%	83.29%

17.06 36.91 24.29 23.01 20.74 23.01  
 Analyst H2V Time 1600 Date 02/28/94

Sample I.D.	556	555	557	558	559	560
Tare-Dish 1	28.57g	29.89g	28.56g	29.76g	28.51g	29.15g
Tare Dish 2	28.57g	29.89g	28.56g	29.76g	28.51g	29.15g
Dish+1stDry	49.61g	49.71g	47.25g	57.33g	56.29g	61.38g
Dish+2ndDry	49.61g	49.71g	47.25g	57.33g	56.29g	61.38g
Volume	52.14g	53.03g	50.10g	62.32g	60.04g	67.81g
% Solids	89.27%	85.66%	86.77%	84.67%	88.11%	83.37%

23.57 23.14 21.54 32.57 31.53 38.66  
 Analyst LAC Time 1730 Date 02/28/94

Sample I.D.	561	562	563			
Tare-Dish 1	29.01g	30.39g	28.82g			
Tare Dish 2	29.01g	30.39g	28.82g			
Dish+1stDry	55.63g	62.40g	64.89g			
Dish+2ndDry	55.63g	62.40g	64.89g			
Volume	57.97g	81.00g	81.48g			
% Solids	91.92%	63.25%	68.50%			

28.96 50.61 52.66



# PERCENT SOLIDS

Analyst HAV

Time 1100

Date 02/22/94

Sample I.D.	9402010455	9402015				
Tare Dish 1	27.86g					
Tare Dish 2	27.86g					
Dish+1stDry						
Dish+2ndDry						
Wet sample + Volume dish	44.59g					
% Solids						

Analyst HAV

Time 1500

Date 02/25/94

Sample I.D.	9402010531	532	533	534	535	536
Tare-Dish 1	29.92g	28.19g	28.57g	31.04g	28.18g	28.65g
Tare Dish 2	28.92g	28.19g	28.57g	31.04g	28.18g	28.65g
Dish+1stDry	39.36g	33.22g	40.97g	48.03g	46.55g	68.27g
Dish+2ndDry	39.36g	33.22g	40.97g	48.03g	46.55g	68.27g
Dish + wet sample Volume	41.23g	34.32g	42.37g	50.85g	49.38g	71.76g
% Solids	84.80%	82.05%	89.85%	85.75%	86.70%	91.90%

Analyst HAV

Time 0900

Date 02/28/94

Sample I.D.	9402010537	538	539	540	541	542
Tare-Dish 1	28.85g	27.87g	29.17g	29.01g	29.50g	28.62
Tare Dish 2	28.85g	27.87g	29.17g	29.01g	29.50g	28.62
Dish+1stDry	49.98g	39.56g	41.68g	40.38g	41.50g	46.75g
Dish+2ndDry	49.98g	39.56g	41.68g	40.38g	41.50g	46.75g
Dish + wet sample Volume	52.44g	41.62g	44.00g	42.47g	44.04g	49.50g
% Solids	89.57%	85.01%	84.35%	98.92%	82.53%	86.83%

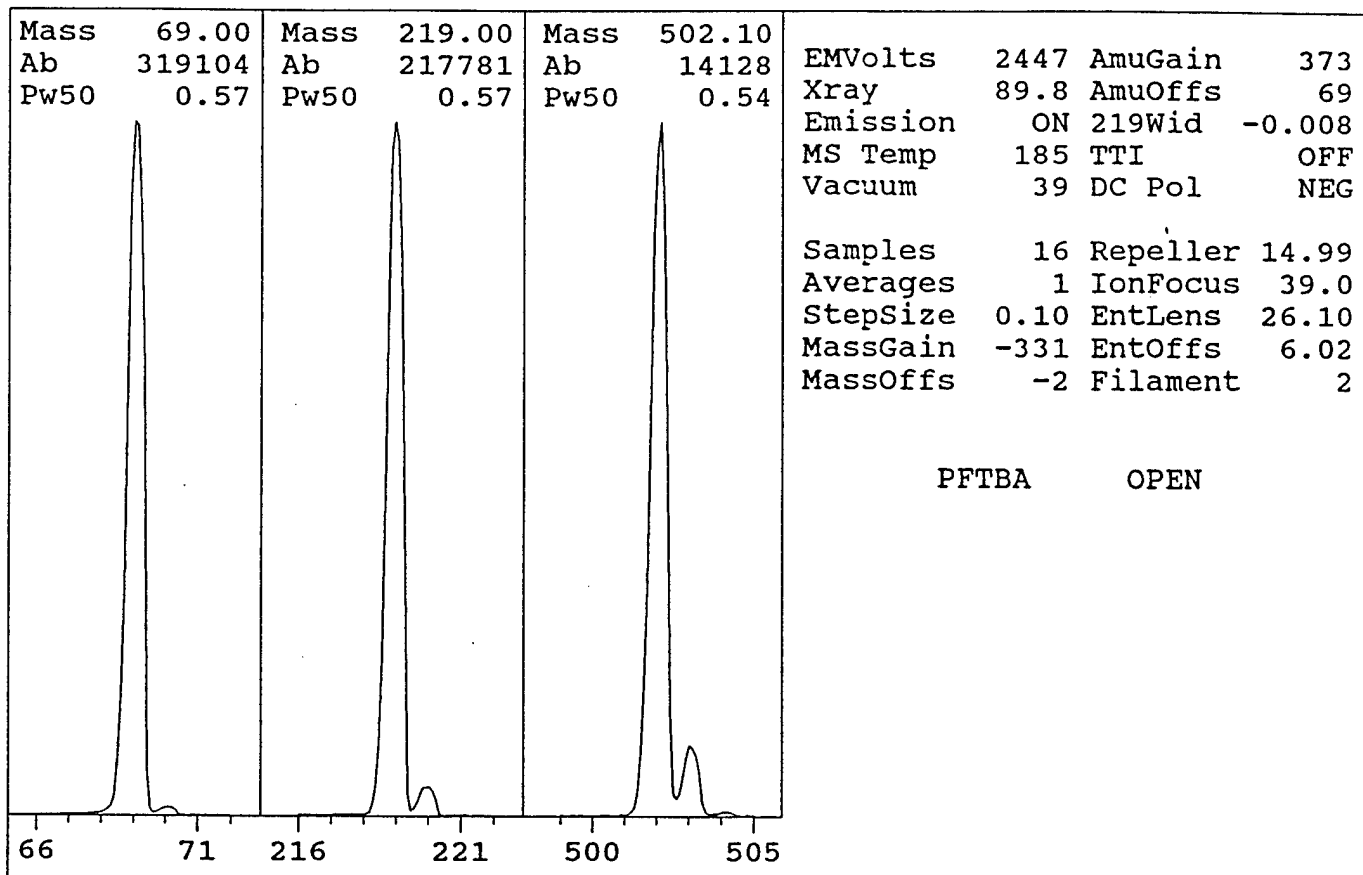


# HP5971 Standard Spectra AutoTune

Instrument: GC/MS

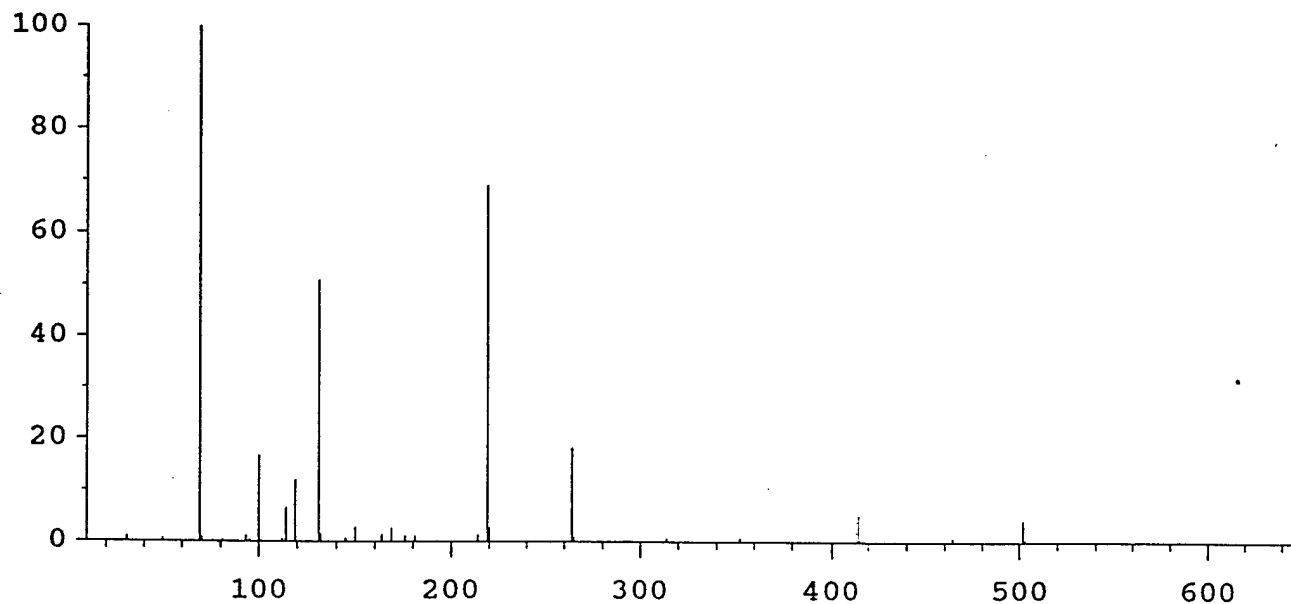
Mon Feb 28 08:08:13 1994

C:\HPCHEM\1\5971\ATUNE.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10

80 peaks Base: 69.05 Abundance: 277888



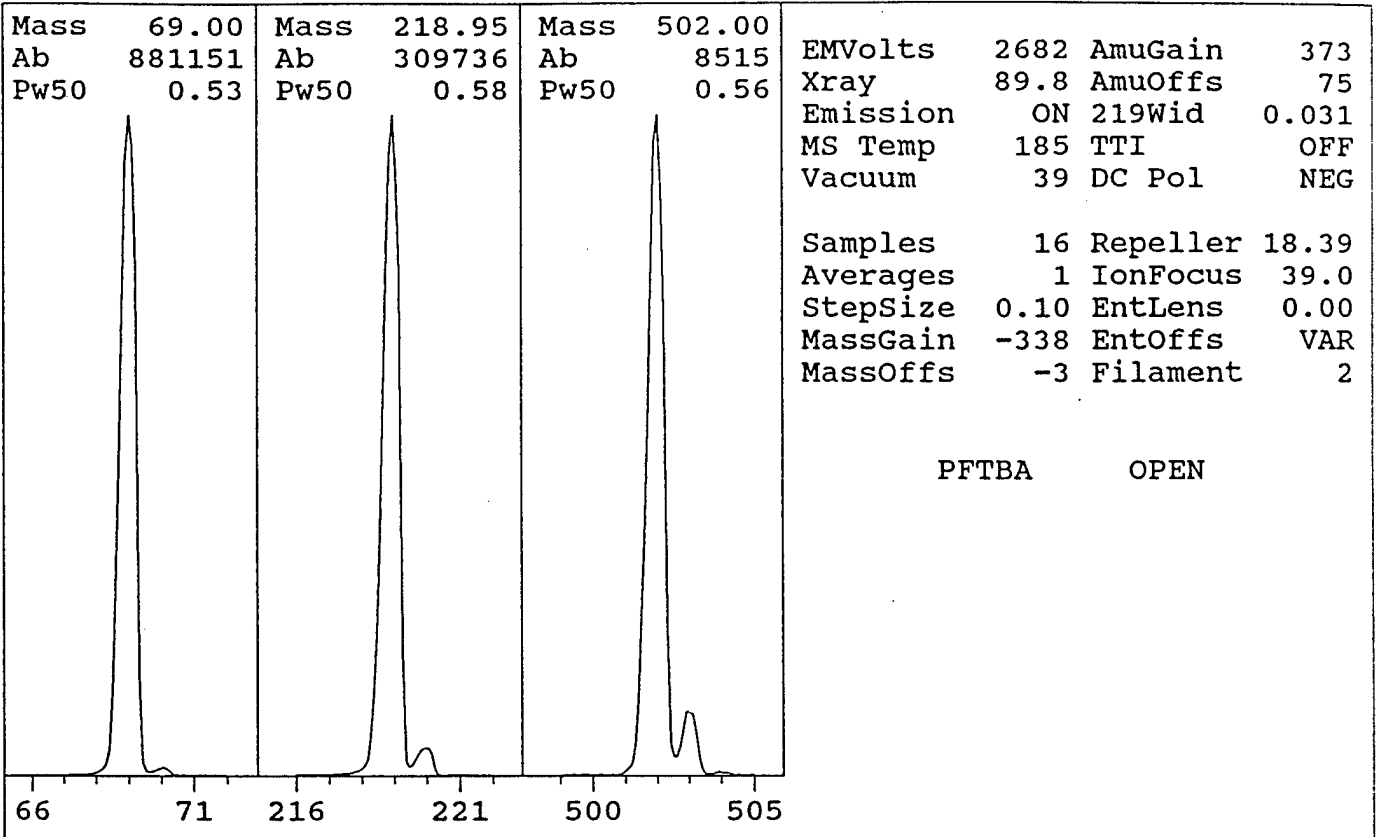
Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.05	277888	100.00	70.05	2912	1.05
219.00	192256	69.18	220.00	8078	4.20
502.05	12114	4.36	503.05	1220	10.07



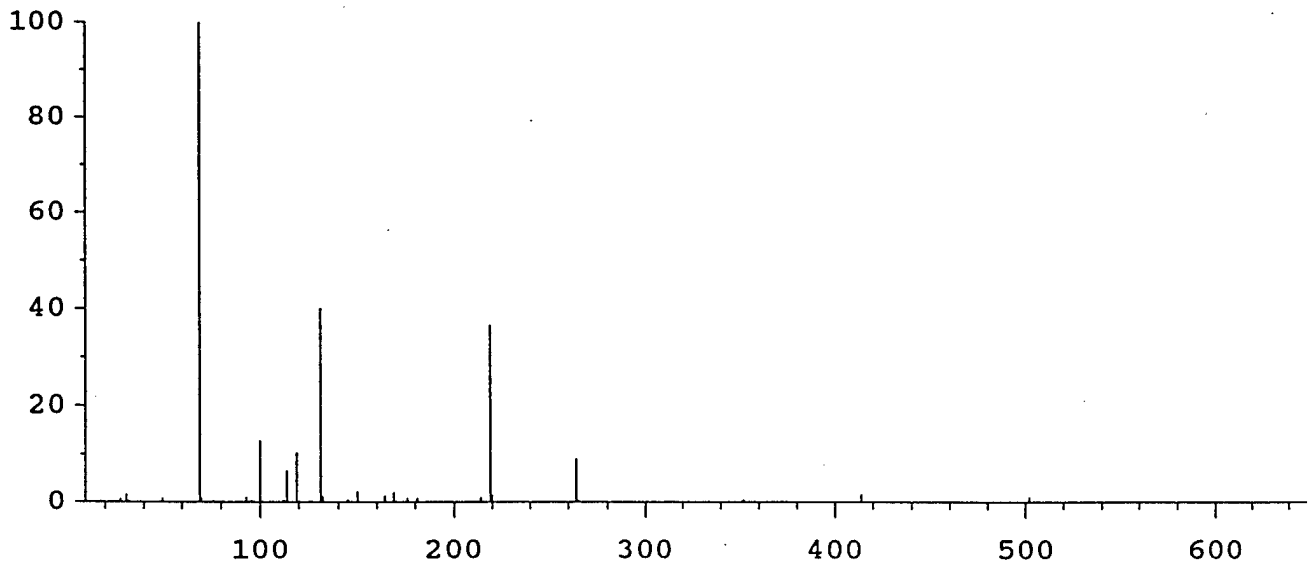
# HP5971 BFB Dynamic Target Tune

Mon Feb 28 08:16:58 1994

C:\HPCHEM\1\5971\BFB.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
116 peaks Base: 69.00 Abundance: 726976



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	726976	100.00	70.00	7967	1.10
218.90	266816	36.70	219.90	11403	4.27
501.95	7393	1.02	502.95	739	10.00

TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	14.1	13.8	14.6	16.1
TARGET ABUND(%) :	100.0	35.0	30.0	0.8
ACTUAL TUNE ABUND(%) :	100.0	40.3	36.7	1.0



BFB

Data File : C:\HPCHEM\1\DATA\022894.D

Acq Time : 28 Feb 94 8:22 am

Sample : BFB TUNE EVALUATION

Misc : 1uL INJECTION (50nG)

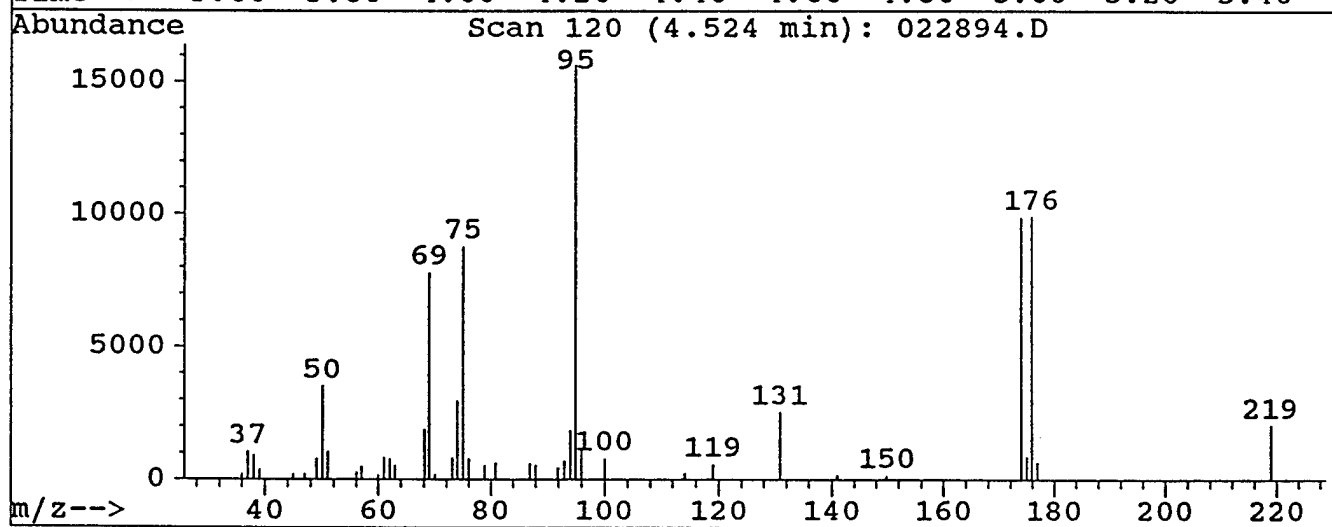
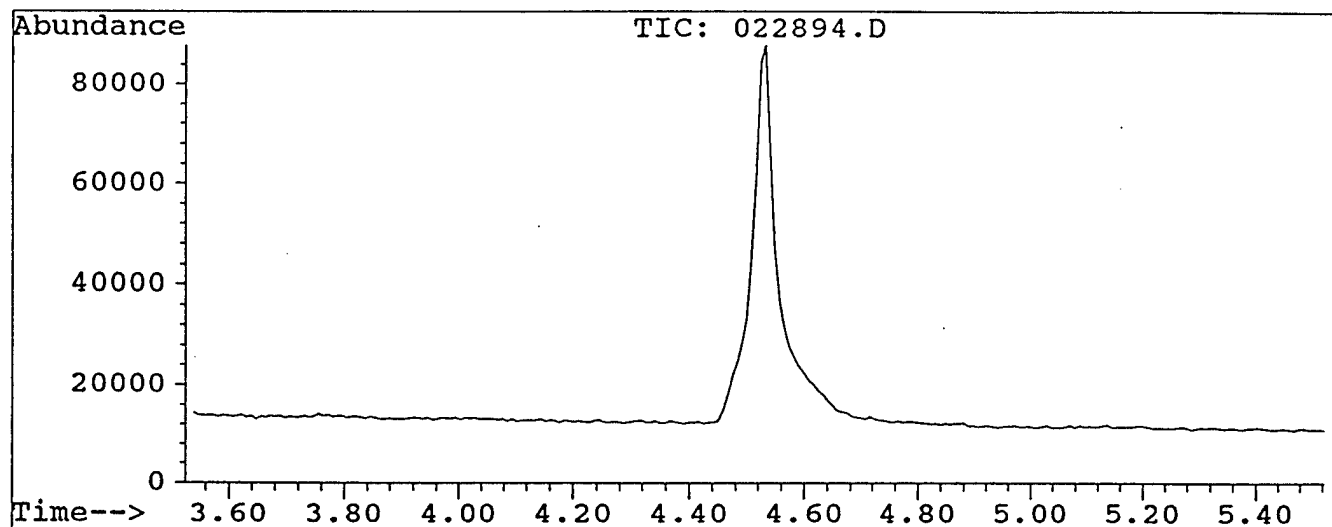
Operator: HJV

Inst : GC/MS

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\BFB624.M

Title :



Peak Apex is scan: 120

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.4	3507	PASS
75	95	30	60	56.1	8776	PASS
95	95	100	100	100.0	15633	PASS
96	95	5	9	7.0	1091	PASS
131	95	0	2	0.0	0	PASS
174	95	50	100	63.2	9882	PASS
175	174	5	9	8.7	858	PASS
176	174	95	101	100.3	9909	PASS
177	176	5	9	6.6	654	PASS



## SEQUENCE.LOG

Simulate Run Sequence Mon Feb 28 08:52:26 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0228VOL.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\022894\

Method Path: C:\HPCHEM\1\METHODS\

Line Type	Vial	DataFile	Method	Sample Name	
ES	1) Sample	1	0228HJV1	8240	BLANK FOR VO ANALYS
	2) Sample	1	0228HJV2	8240	SPCC 100PPB
	3) Sample	1	0228HJV3	8240	CCC 100PPB
	4) Sample	1	0228HJV4	8240	9402010531
	5) Sample	1	0228HJV5	8240	9402010532
	6) Sample	1	0228HJV6	8240	9402010533
	7) Sample	1	0228HJV7	8240	9402010534
	8) Sample	1	0228HJV8	8240	9402010535
	9) Sample	1	0228HJV9	8240	9402010536
	10) Sample	1	0228HV10	8240	9402010537

Bytes Needed: 500000 Space on drive C: 43196416

Sequence Verification Done!

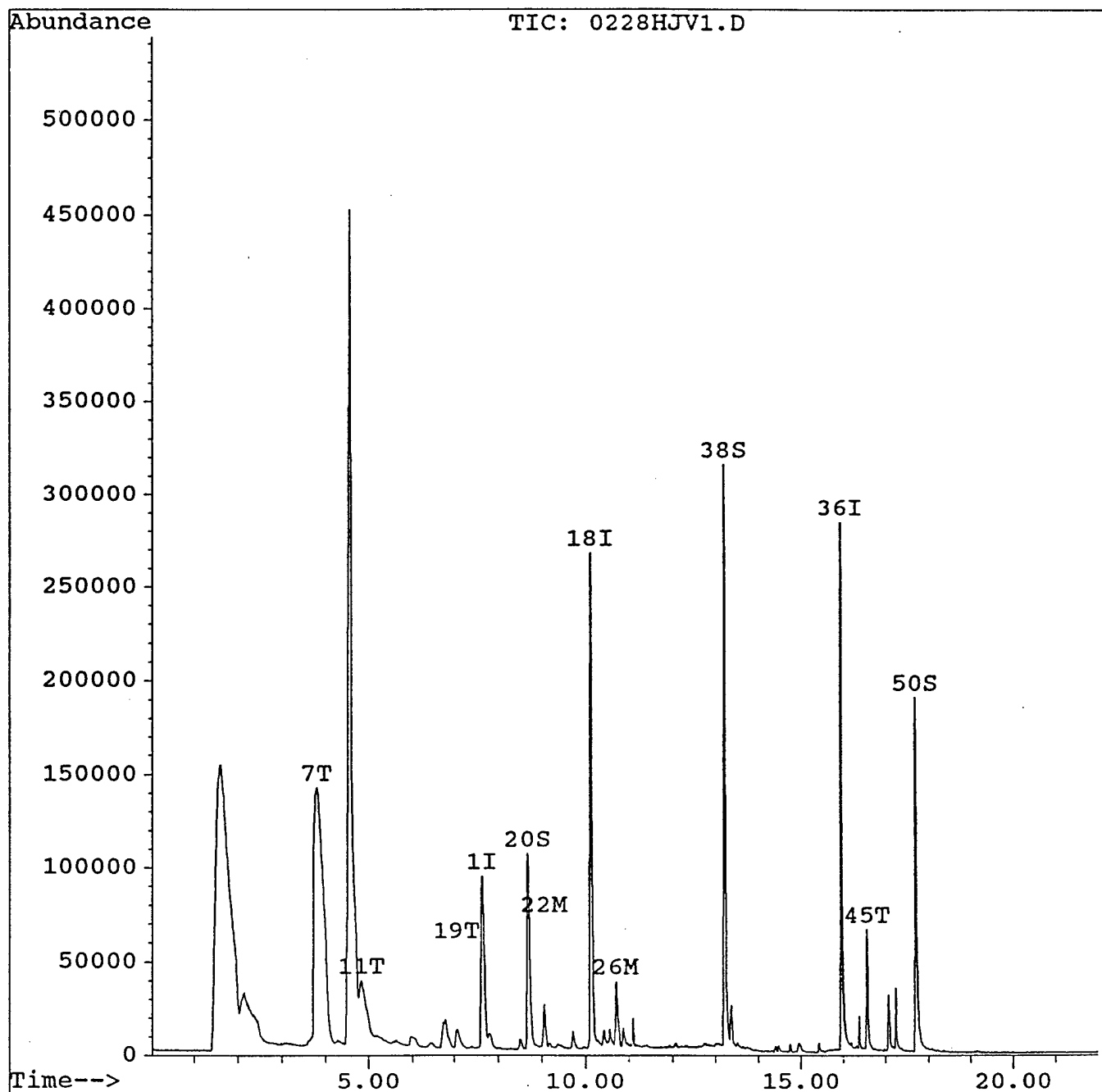


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV1.D  
Acq Time : 28 Feb 94 9:04 am  
Sample : BLANK FOR VO ANALYSES  
Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR.  
Quant Time: Mar 2 8:10 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV1.D  
 Acq Time : 28 Feb 94 9:04 am  
 Sample : BLANK FOR VO ANALYSES  
 Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR.  
 Quant Time: Mar 2 8:10 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.63	130	90054	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.12	114	312779	50.00	ug/l	0.
36) Chlorobenzene-d5	15.95	117	211491	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.68	65	200371	70.12	ug/l	140.
38) Toluene-d8	13.22	98	302162	52.04	ug/l	104.
50) Bromofluorobenzene	17.70	95	112942	48.32	ug/l	96.
Target Compounds						Qval
7) Acetone	3.80	43	1348399	247.88	ug/l	
11) Methylene chloride	4.84	84	40540	11.90	ug/l	#
19) 2-Butanone	7.04	43	40774	12.21	ug/l	m
22) Benzene	9.06	78	40027	5.80	ug/l	#
26) Trichloroethene	10.70	130	17700	8.86	ug/l	
45) M&P-Xylene	16.57	106	23542	7.54	ug/l	



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV2.D

Acq Time : 28 Feb 94 9:35 am

Operator: HJV

Sample : SPCC 100PPB

Inst : GC/MS

Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT Multiplr: 1.00

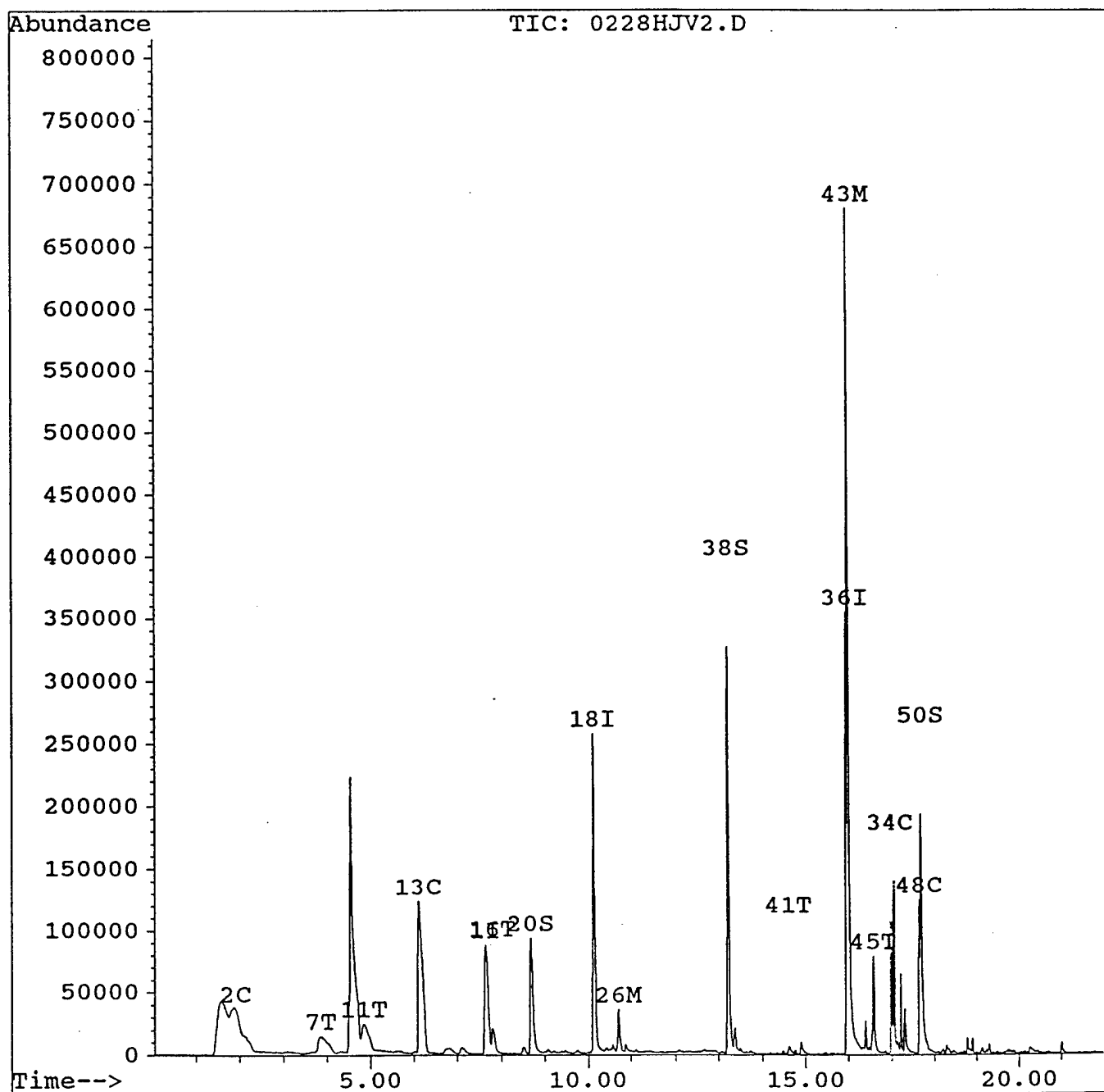
Quant Time: Feb 28 11:13 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





## Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV2.D

Acq Time : 28 Feb 94 9:35 am

Operator: HJV

Sample : SPCC 100PPB

Inst : GC/MS

Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT Multiplr: 1.00

Quant Time: Feb 28 11:13 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.64	130	86308	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.12	114	294042	50.00	ug/l	0
36) Chlorobenzene-d5	15.96	117	240498	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.69	65	178272	66.36	ug/l	132
38) Toluene-d8	13.22	98	311597	47.19	ug/l	94
50) Bromofluorobenzene	17.71	95	112331	42.26	ug/l	84
Target Compounds						Qva
2) Chloromethane	1.92	50	147967	118.38	ug/l m	
7) Acetone	3.86	43	135376	25.97	ug/l m	
11) Methylene chloride	4.85	84	39079	11.97	ug/l m	
13) 1,1-Dichloroethane	6.11	63	433139	108.16	ug/l	
16) Chloroform	7.80	83	35205	6.64	ug/l m	
26) Trichloroethene	10.70	130	18189	9.68	ug/l	
34) Bromoform	16.98	173	87072	62.82	ug/l m	
41) 2-Hexanone	14.61	43	11299	6.61	ug/l #	
43) Chlorobenzene	16.00	112	417861	94.25	ug/l m	
45) M&P-Xylene	16.57	106	22764	6.41	ug/l	
48) 1,1,2,2-Tetrachloroethane	17.66	83	108713	70.19	ug/l m	

## Calculation of Response Factors:

- (1) chloromethane  $\frac{147967 \times 50}{86308 \times 100} = 0.86 \checkmark$
- (2) 1,1-Dichloroethane  $\frac{433139 \times 50}{86308 \times 100} = 2.50 \checkmark$
- (3) Bromoform =  $\frac{87072 \times 50}{294042 \times 100} = 0.150 \text{ a end}$
- (4) chlorobenzene =  $\frac{417861 \times 50}{240498 \times 100} = 0.87 \checkmark$
- (5) 1,1,2,2 Tetrachloroethane =  $\frac{108713 \times 50}{240498 \times 100} = 0.23 \text{ out.}$

(# ) = qualifier out of range (m) = manual integration

0228HJV2.D 8240.M

Mon Feb 28 11:13:55 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV3.D

Acq Time : 28 Feb 94 10:07 am

Operator: HJV

Sample : CCC 100PPB

Inst : GC/MS

Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR Multiplr: 1.00

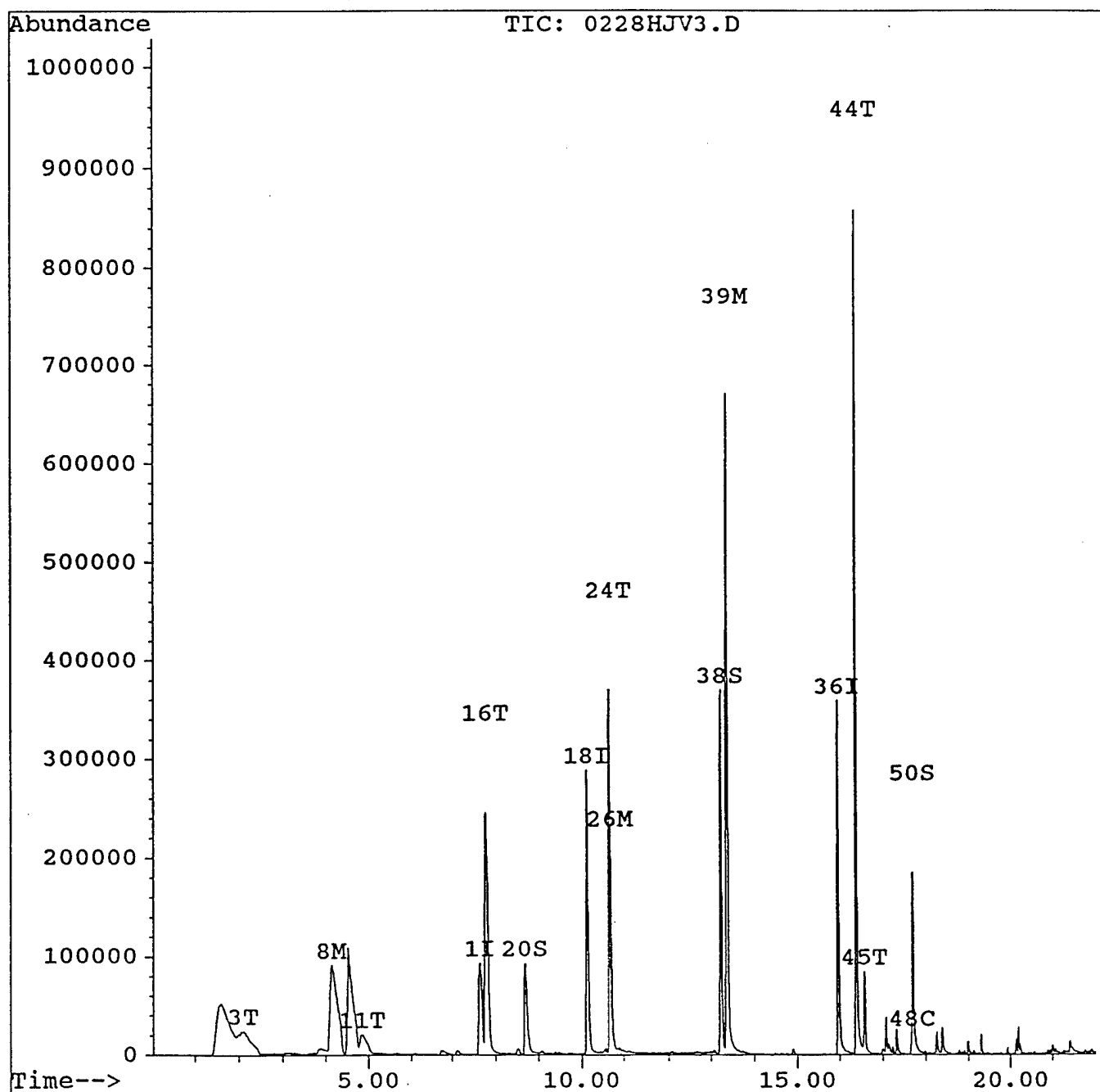
Quant Time: Feb 28 11:17 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV3.D  
 Acq Time : 28 Feb 94 10:07 am  
 Sample : CCC 100PPB  
 Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR  
 Quant Time: Feb 28 11:17 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.64	130	87575	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.12	114	330861	50.00	ug/l	0
36) Chlorobenzene-d5	15.95	117	253687	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.69	65	181852	60.16	ug/l	120
38) Toluene-d8	13.23	98	344647	49.48	ug/l	98
50) Bromofluorobenzene	17.70	95	101377	36.16	ug/l	72
Target Compounds						Qva
3) Vinyl chloride	2.11	62	229261	110.10	ug/l	m
8) 1,1-Dichloroethene	4.15	61	406903	107.37	ug/l	m
11) Methylene chloride	4.86	84	39787	12.01	ug/l	m
16) Chloroform	7.78	83	496318	92.23	ug/l	m
24) 1,2-Dichloropropane	10.65	63	173615	105.04	ug/l	#
26) Trichloroethene	10.68	130	17396	8.23	ug/l	#
39) Toluene	13.37	92	407132	80.73	ug/l	m
44) Ethylbenzene	16.38	106	198013	87.33	ug/l	m
45) M&P-Xylene	16.57	106	24523	6.54	ug/l	m
48) 1,1,2,2-Tetrachloroethane	17.67	83	13803	8.45	ug/l	m

Calculation of Response Factor:

Percent Difference

- (1) Vinyl chloride =  $\frac{229261 \times 50}{87575 \times 100} = 1.3089$   $\frac{1.189 - 1.3089 \times 100}{1.189} =$
- (2) 1,1-Dichloroethene =  $\frac{406903 \times 50}{87575 \times 100} = 2.3232$   $\frac{2.164 - 2.3232 \times 100}{2.164} = 7.$
- (3) Chloroform =  $\frac{496318 \times 50}{87575 \times 100} = 2.8337$   $\frac{3.073 - 2.8337 \times 100}{3.073} =$
- (4) 1,2-Dichloropropane =  $\frac{173615 \times 50}{330861 \times 100} = 0.2624$   $\frac{0.250 - 0.2624 \times 100}{0.250} =$
- (5) Toluene =  $\frac{407132 \times 50}{253687 \times 100} = 0.8024$   $\frac{0.994 - 0.8024 \times 100}{0.994} = 19.$
- (6) Ethyl benzene =  $\frac{198013 \times 50}{253687 \times 100} = 0.3903$   $\frac{0.447 - 0.3903 \times 100}{0.447} = 12.$
- CCC's All Cleared

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV4.D

Acq Time : 28 Feb 94 10:40 am

Operator: HJV

Sample : 9402010531

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

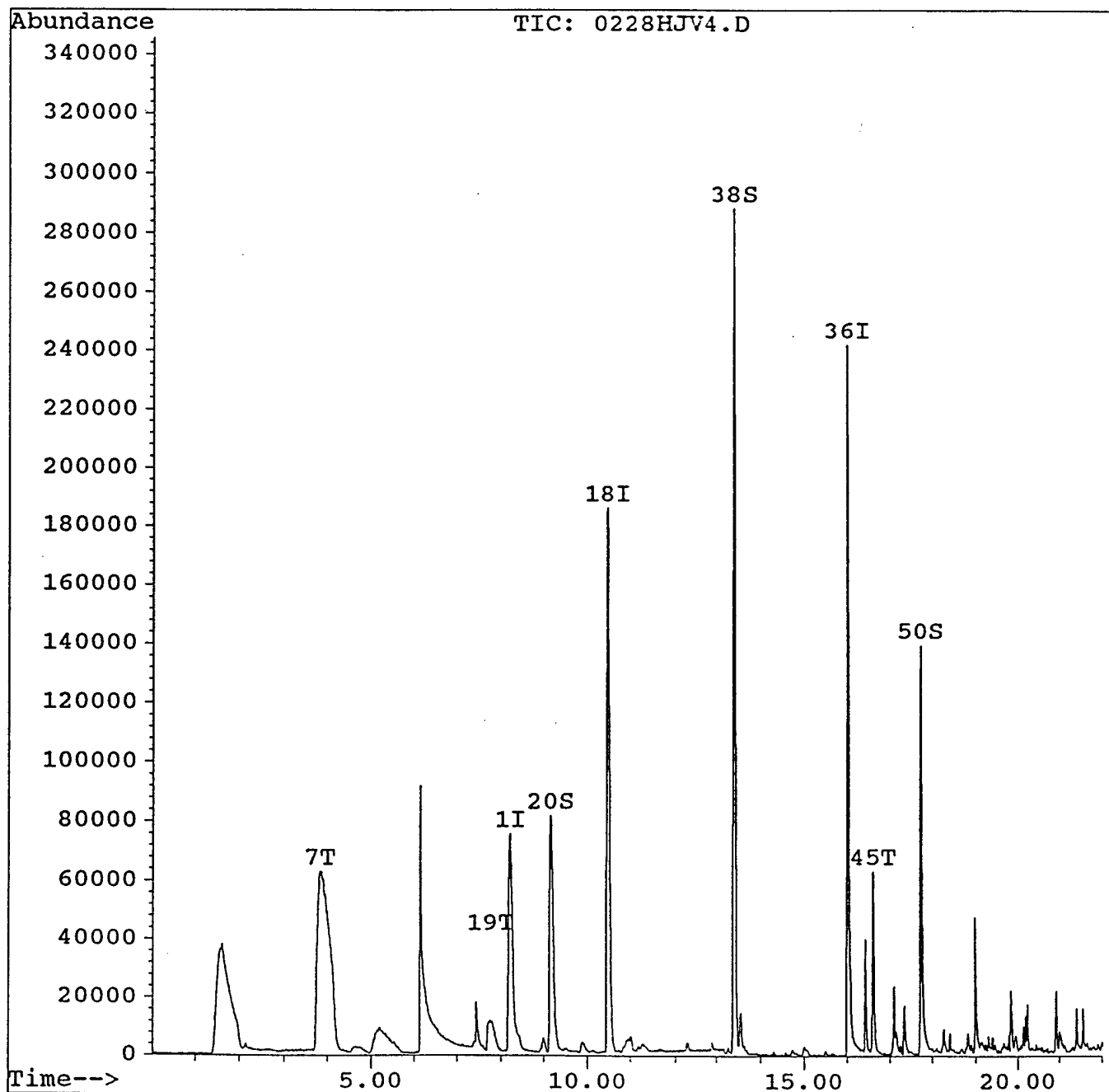
Quant Time: Feb 28 14:55 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV4.D

Acq Time : 28 Feb 94 10:40 am

Operator: HJV

Sample : 9402010531

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Feb 28 14:55 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mi)
1) Bromochloromethane	8.21	130	84177	50.00	ug/l	0.59
18) 1,4-Difluorobenzene	10.46	114	300814	50.00	ug/l	0.3
36) Chlorobenzene-d5	16.02	117	207223	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	9.14	65	173691	63.20	ug/l	126.4
38) Toluene-d8	13.40	98	297867	52.35	ug/l	104.71
50) Bromofluorobenzene	17.73	95	102715	44.85	ug/l	89.69
Target Compounds						Qvalue
7) Acetone	3.84	43	805485	158.41	ug/l m	70
19) 2-Butanone	7.78	43	79651	24.81	ug/l m	7
45) M&P-Xylene	16.61	106	22596	7.38	ug/l m	9

(#) = qualifier out of range (m) = manual integration

0228HJV4.D 8240.M

Mon Feb 28 14:56:03 1994

GC/MS

Page 1



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV5.D

Acq Time : 28 Feb 94 11:14 am

Operator: HJV

Sample : 9402010532

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

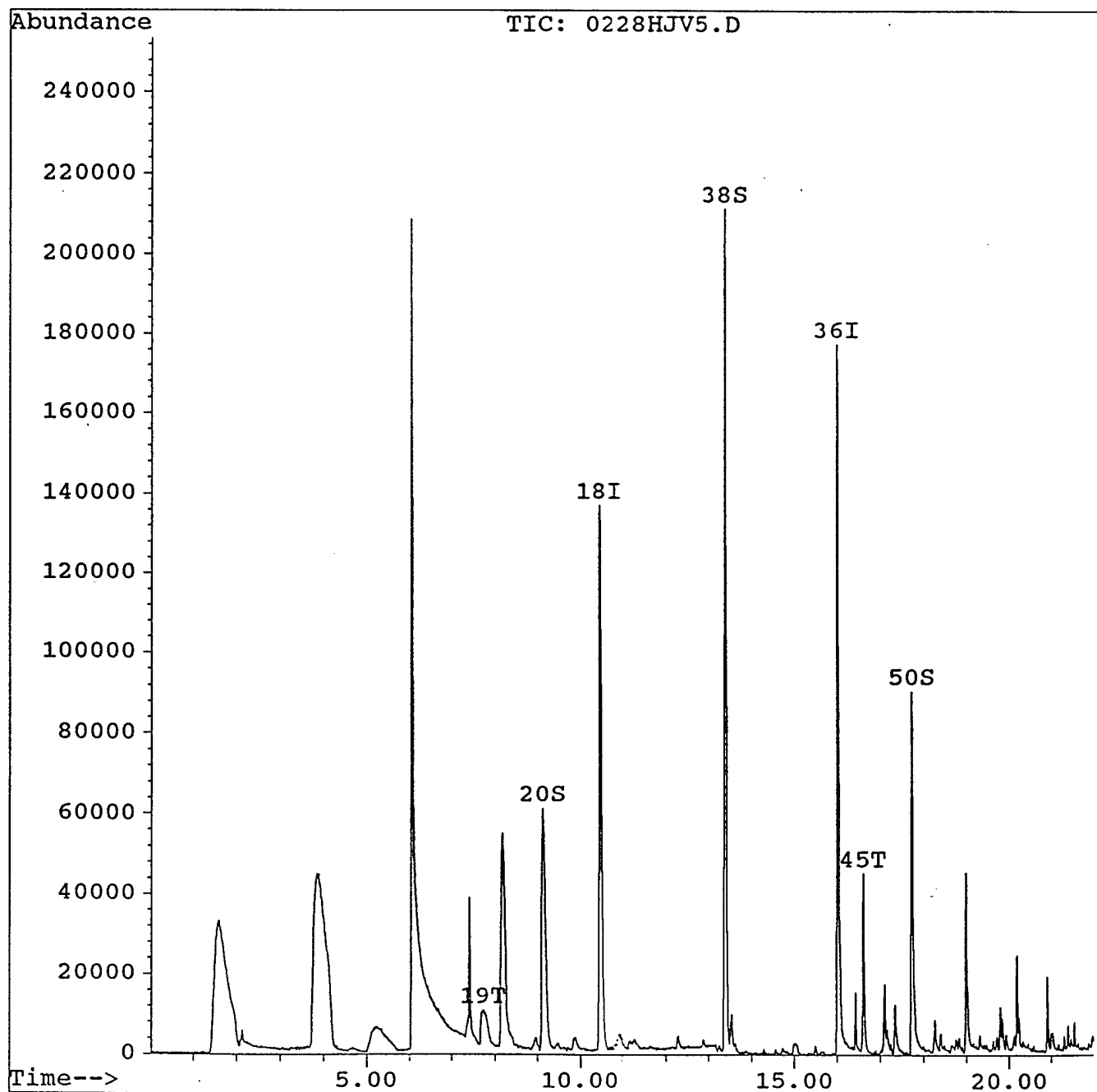
Quant Time: Mar 2 8:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV5.D  
 Acq Time : 28 Feb 94 11:14 am Operator: HJV  
 Sample : 9402010532 Inst : GC/MS  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00  
 Quant Time: Mar 2 8:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	0.00	130	0	0.00	ug/l	-7.6
18) 1,4-Difluorobenzene	10.45	114	221574	50.00	ug/l	0.
36) Chlorobenzene-d5	16.01	117	136571	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	9.12	65	129715	64.08	ug/l	128.
38) Toluene-d8	13.39	98	217191	57.92	ug/l	115.8
50) Bromofluorobenzene	17.73	95	72452	48.00	ug/l	96.
Target Compounds						Qvalue
19) 2-Butanone	7.72	43	65178	27.56	ug/l m	9
45) M&P-Xylene	16.60	106	15827	7.85	ug/l	

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV6.D

Acq Time : 28 Feb 94 11:48 am

Sample : 9402010533

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Quant Time: Mar 2 8:08 1994

Operator: HJV

Inst : GC/MS

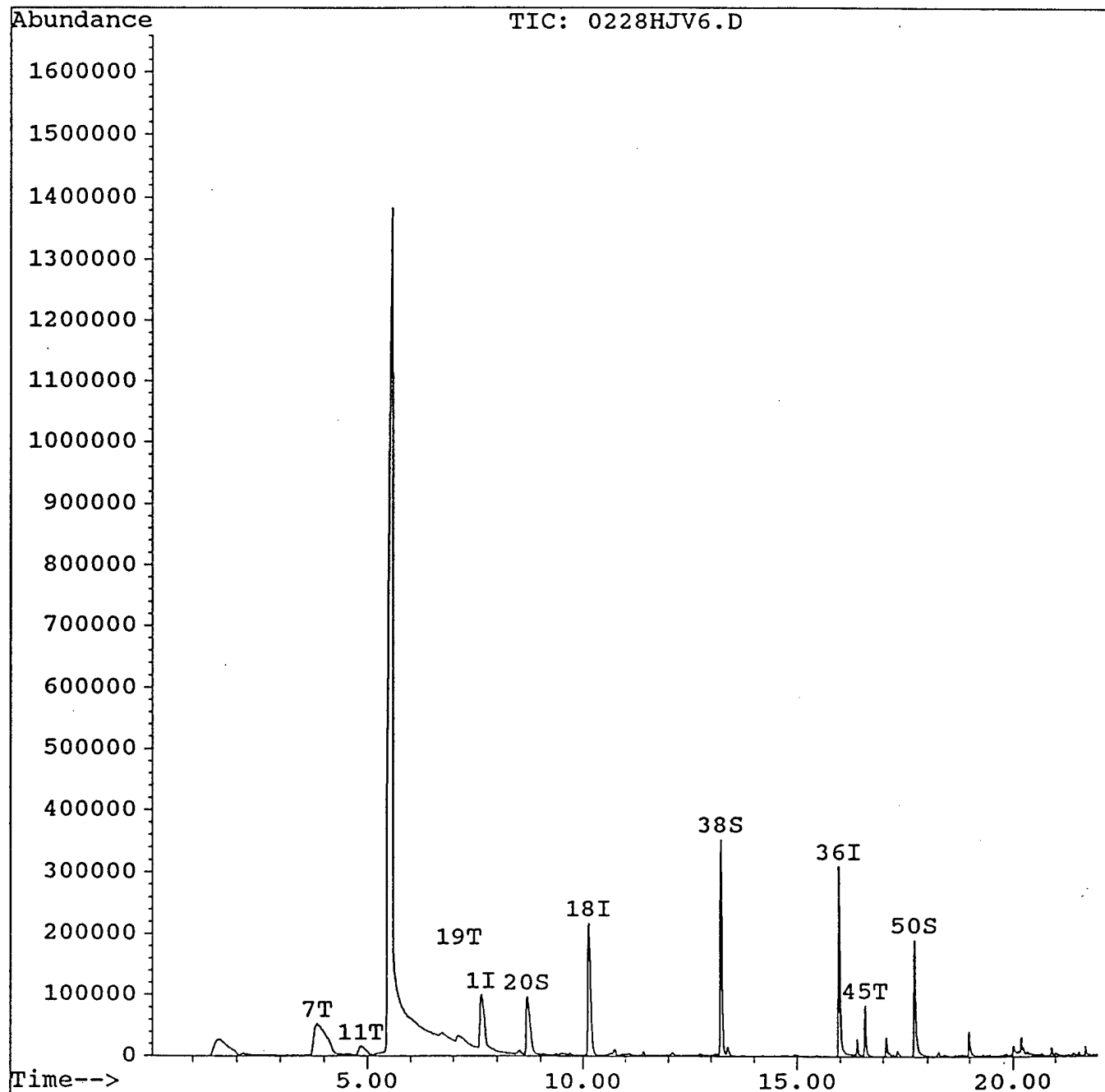
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV6.D

Acq Time : 28 Feb 94 11:48 am

Operator: HJV

Sample : 9402010533

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:08 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M)
1) Bromochloromethane	7.64	130	100102	50.00	ug/l	0.02
18) 1,4-Difluorobenzene	10.13	114	362356	50.00	ug/l	0.03
36) Chlorobenzene-d5	15.97	117	272404	50.00	ug/l	0.03
System Monitoring Compounds						%Recovery
20) 1,2-Dichloroethane-d4	8.69	65	213616	64.53	ug/l	129.5
38) Toluene-d8	13.24	98	368538	49.28	ug/l	98.55
50) Bromofluorobenzene	17.71	95	125363	41.64	ug/l	83.3
Target Compounds						Qvalue
7) Acetone	3.85	43	661921	109.47	ug/l m	65
11) Methylene chloride	4.85	84	35670	9.42	ug/l	1
19) 2-Butanone	7.11	43	111634	28.86	ug/l m	3
45) M&P-Xylene	16.58	106	29778	7.40	ug/l	82

(#) = qualifier out of range (m) = manual integration

0228HJV6.D 8240.M

Wed Mar 02 08:09:16 1994

GC/MS

Page 1



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV7.D

Acq Time : 28 Feb 94 12:22 pm

Operator: HJV

Sample : 9402010534

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

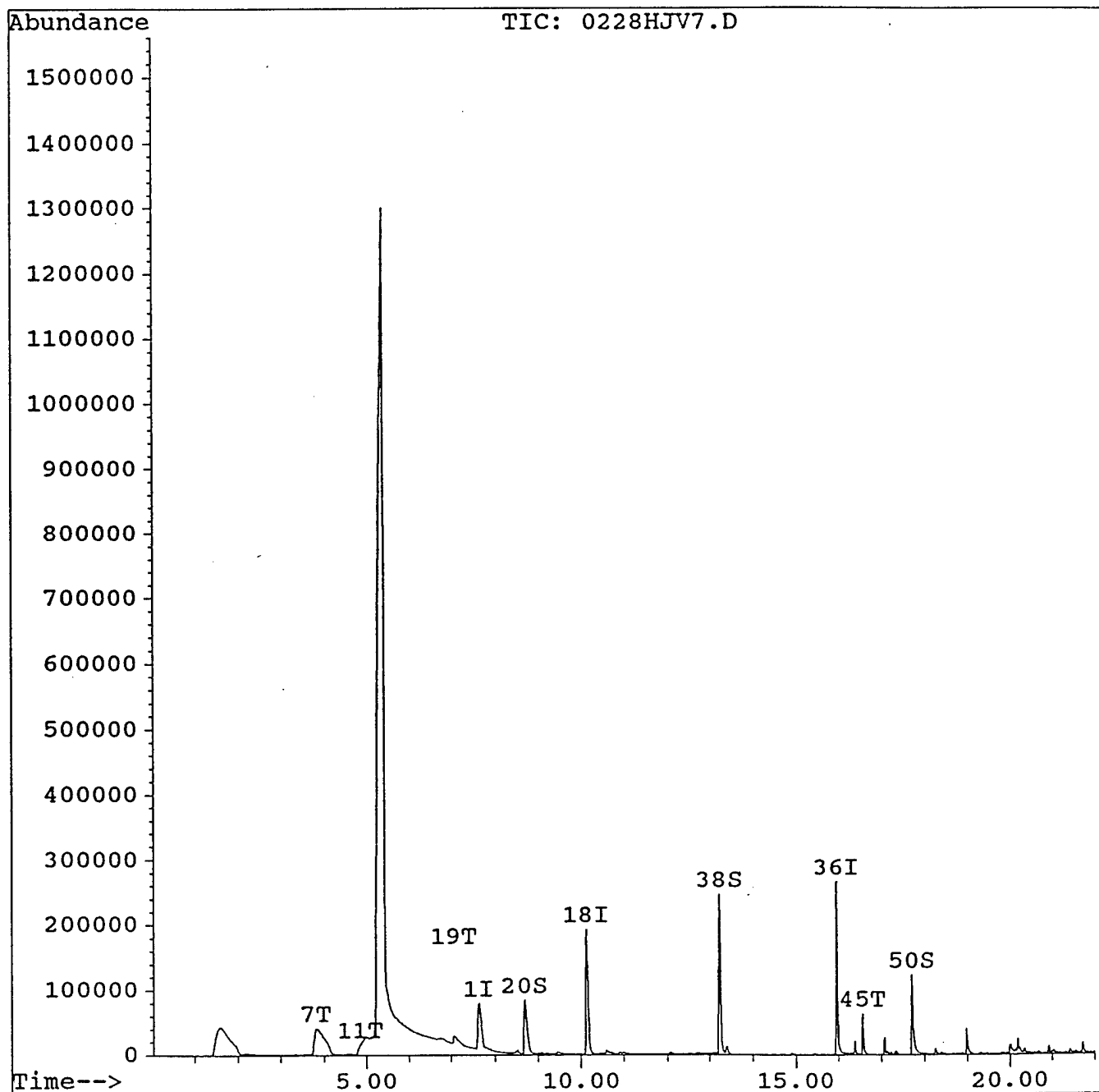
Quant Time: Mar 2 8:14 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV7.D  
 Acq Time : 28 Feb 94 12:22 pm Operator: HJV  
 Sample : 9402010534 Inst : GC/MS  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00  
 Quant Time: Mar 2 8:14 1994

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.63	130	71444	50.00	ug/l	0.00
18) 1,4-Difluorobenzene	10.13	114	259415	50.00	ug/l	0.00
36) Chlorobenzene-d5	15.96	117	190859	50.00	ug/l	0.00
System Monitoring Compounds						%Recovery
20) 1,2-Dichloroethane-d4	8.69	65	132000	55.69	ug/l	111.00
38) Toluene-d8	13.24	98	231936	44.26	ug/l	88.50
50) Bromofluorobenzene	17.72	95	86500	41.01	ug/l	82.00
Target Compounds						Qvalue
7) Acetone	3.82	43	432859	100.30	ug/l m	50
11) Methylene chloride	4.84	84	25962	9.61	ug/l	0
19) 2-Butanone	7.06	43	85052	30.72	ug/l m	00
45) M&P-Xylene	16.57	106	20436	7.25	ug/l	80

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV8.D

Acq Time : 28 Feb 94 12:55 pm

Operator: HJV

Sample : 9402010535

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

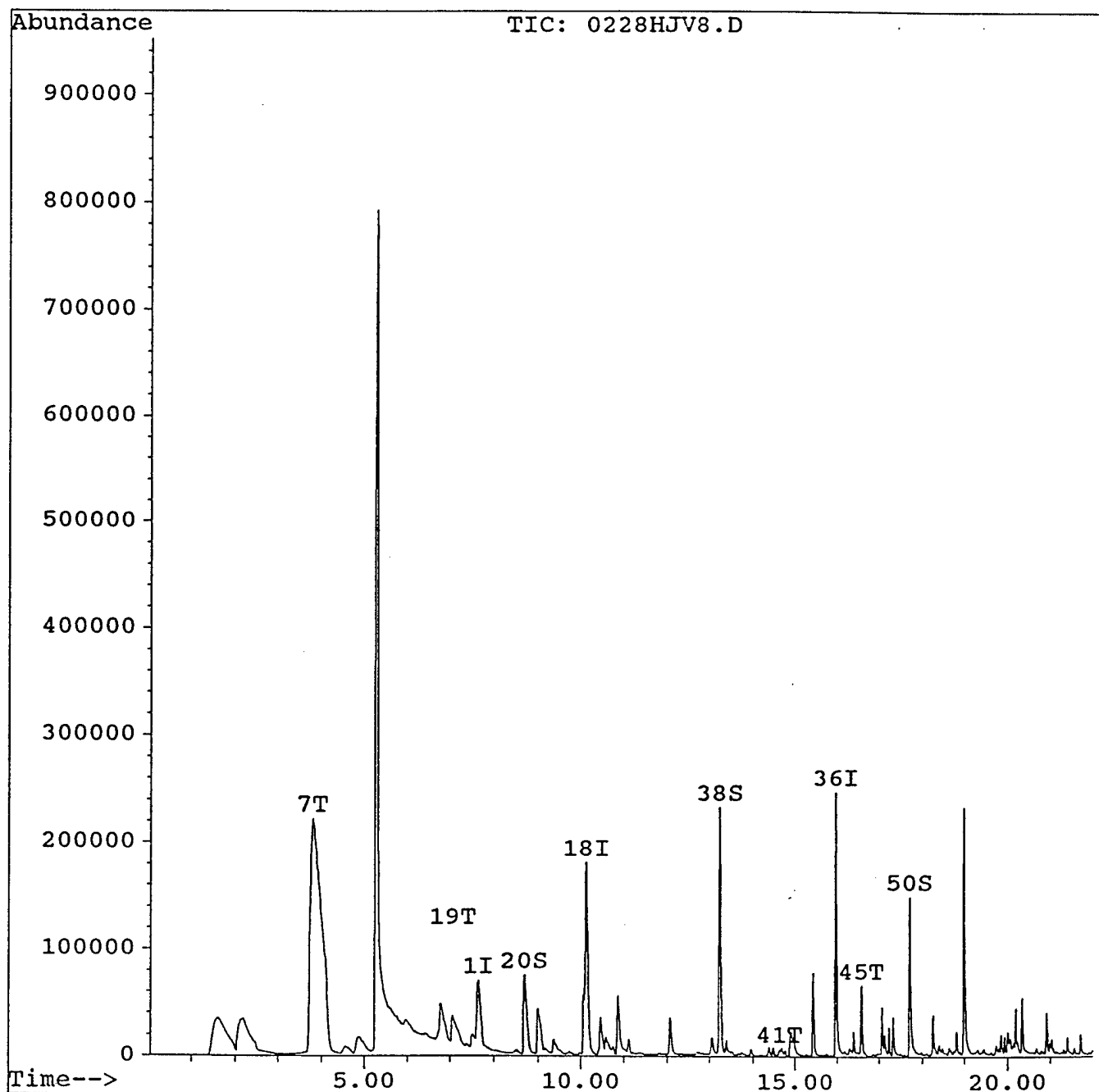
Quant Time: Mar 2 8:18 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HJV8.D  
 Acq Time : 28 Feb 94 12:55 pm  
 Sample : 9402010535  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S  
 Quant Time: Mar 2 8:18 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.64	130	65499	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.14	114	243824	50.00	ug/l	0
36) Chlorobenzene-d5	15.97	117	186695	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	129178	57.99	ug/l	115
38) Toluene-d8	13.24	98	218739	42.67	ug/l	85.0
50) Bromofluorobenzene	17.71	95	89013	43.14	ug/l	86.0
Target Compounds						Qval
7) Acetone	3.80	43	2535303	640.79	ug/l	
19) 2-Butanone	7.05	43	125421	48.19	ug/l m	
41) 2-Hexanone	14.63	43	6731	5.07	ug/l m	
45) M&P-Xylene	16.58	106	20582	7.46	ug/l	



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV10.D

Acq Time : 28 Feb 94 2:03 pm

Sample : 9402010537

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:24 1994

Operator: HJV

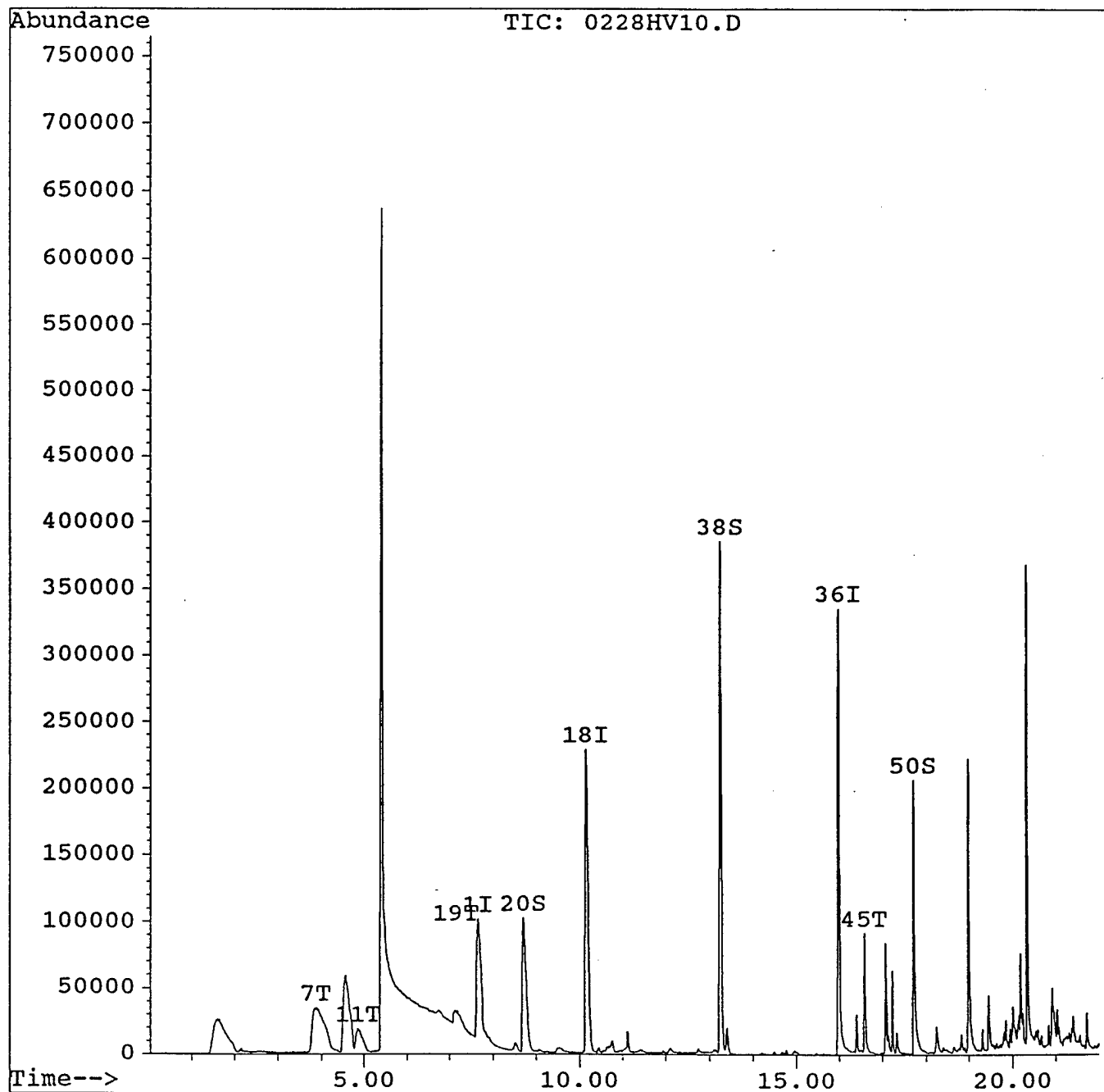
Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





## Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV10.D

Acq Time : 28 Feb 94 2:03 pm

Sample : 9402010537

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:24 1994

Operator: HJV

Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	108749	50.00	ug/l	0.03
18) 1,4-Difluorobenzene	10.14	114	394255	50.00	ug/l	0.04
36) Chlorobenzene-d5	15.98	117	286850	50.00	ug/l	0.04
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.70	65	216963	60.23	ug/l	120.0
38) Toluene-d8	13.25	98	405599	51.50	ug/l	103.00
50) Bromofluorobenzene	17.72	95	131463	41.47	ug/l	82.0
Target Compounds						Qvalue
7) Acetone	3.87	43	448048	68.21	ug/l m	65
11) Methylene chloride	4.86	84	38653	9.40	ug/l m	9
19) 2-Butanone	7.14	43	96067	22.83	ug/l m	13
45) M&P-Xylene	16.58	106	31295	7.39	ug/l	77

-----  
(#) = qualifier out of range (m) = manual integration



## SEQUENCE.LOG

Simulate Run Sequence Mon Feb 28 14:33:46 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0228VOL2.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\022894\

Method Path: C:\HPCHEM\1\METHODS\

Line Type	Vial	DataFile	Method	Sample Name
1) Sample	1	0228HV11	8240	9402010538
2) Sample	1	0228HV12	8240	9402010539
3) Sample	1	0228HV13	8240	9402010540
4) Sample	1	0228HV14	8240	9402010541
5) Sample	1	0228HV15	8240	9402010542
6) Sample	1	0228HV16	8240	9402010543
7) Sample	1	0228HV17	8240	9402010544

Bytes Needed: 350000 Space on drive C: 39829504  
Sequence Verification Done!



Information from Data File:

File: C:\HPCHEM\1\DATA\022894\0228HV10.D  
 Operator: HJV  
 Date Acquired: 28 Feb 94 2:03 pm  
 Method File: 8240  
 Sample Name: 9402010537  
 Misc Info: 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/SURR.  
 Vial Number: 1

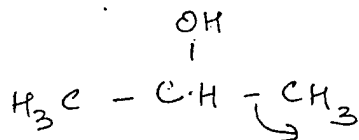
Search Libraries: C:\DATABASE\NBS54K.L

Minimum Quality: 50

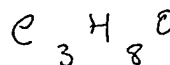
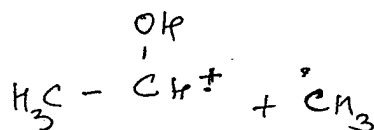
Unknown Spectrum: Apex

Integration Events: AutoIntegrate

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
1	5.42	100.00	C:\DATABASE\NBS54K.L 2-Propanol	123	000067-63-0	78



(2-propanol)



$$\begin{array}{r} 236 \\ 16 \\ 4 \\ \hline 60 \end{array}$$



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV11.D

Acq Time : 28 Feb 94 2:49 pm

Sample : 9402010538

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:27 1994

Operator: HJV

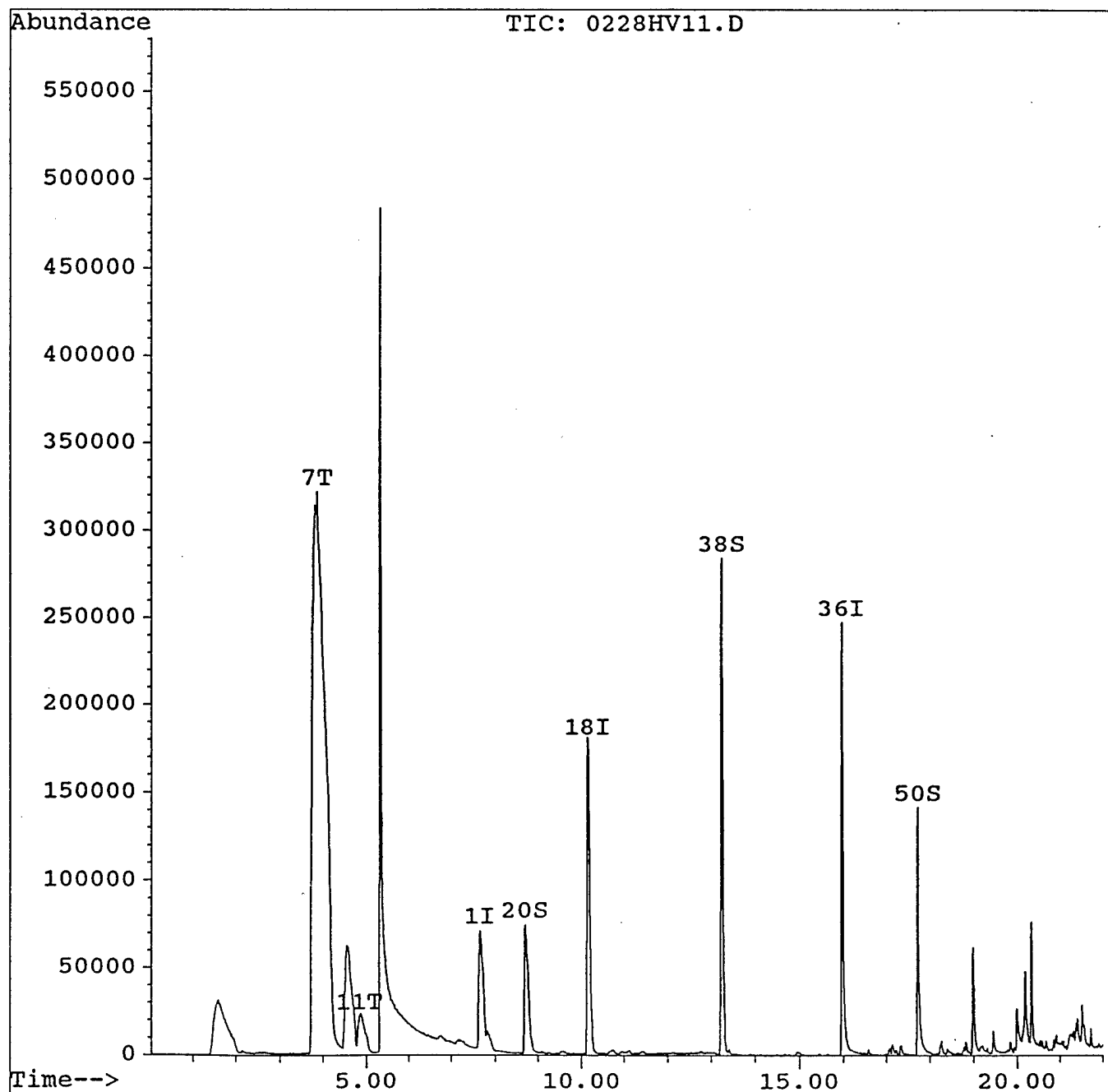
Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV11.D  
 Acq Time : 28 Feb 94 2:49 pm Operator: HJV  
 Sample : 9402010538 Inst : GC/MS  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00  
 Quant Time: Mar 2 8:27 1994

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	80639	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.16	114	306624	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.97	117	213559	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	176697	63.08	ug/l	126.0
38) Toluene-d8	13.25	98	300910	51.32	ug/l	102.6
50) Bromofluorobenzene	17.72	95	96194	40.75	ug/l	81.0
Target Compounds						Qual
7) Acetone	3.87	43	4180164	858.16	ug/l m	3
11) Methylene chloride	4.83	84	51907	17.02	ug/l	

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV12.D

Acq Time : 28 Feb 94 3:23 pm

Sample : 9402010539

Misc : 5g SAMPLE + 5mL WATER WITH 10uLINTSTD/S

Quant Time: Mar 2 8:30 1994

Operator: HJV

Inst : GC/MS

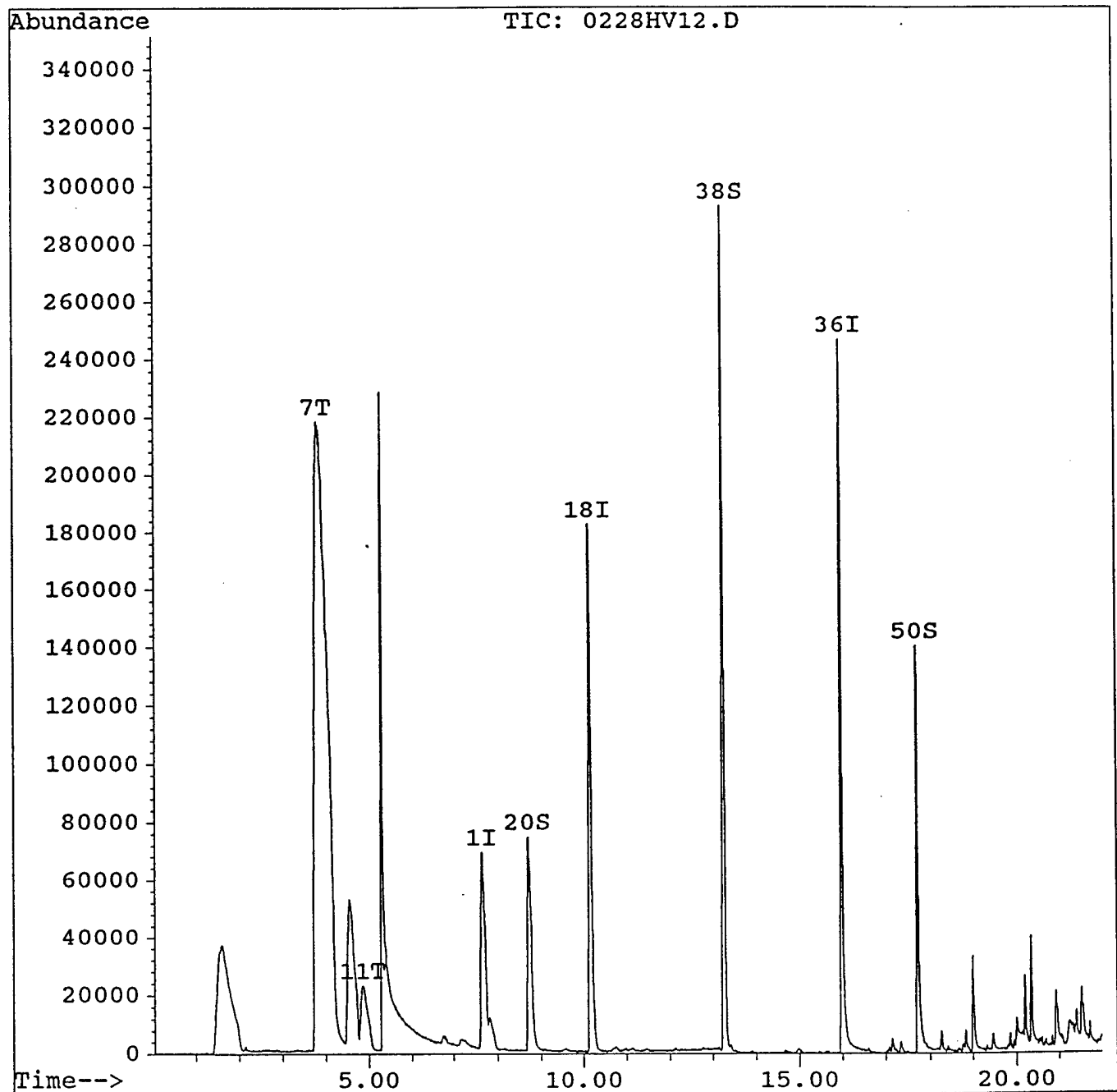
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV12.D  
 Acq Time : 28 Feb 94 3:23 pm Operator: HJV  
 Sample : 9402010539 Inst : GC/MS  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uLINTSTD/S Multiplr: 1.00  
 Quant Time: Mar 2 8:30 1994

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.67	130	81558	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	311647	50.00	ug/l	0.
36) Chlorobenzene-d5	15.97	117	218788	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	175580	61.67	ug/l	123.
38) Toluene-d8	13.25	98	306975	51.10	ug/l	102.
50) Bromofluorobenzene	17.72	95	101838	42.11	ug/l	84.
Target Compounds						Quali
7) Acetone	3.82	43	2695972	547.23	ug/l m	
11) Methylene chloride	4.87	84	51349	16.65	ug/l m	

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV13.D

Acq Time : 28 Feb 94 3:56 pm

Sample : 9402010540

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:31 1994

Operator: HJV

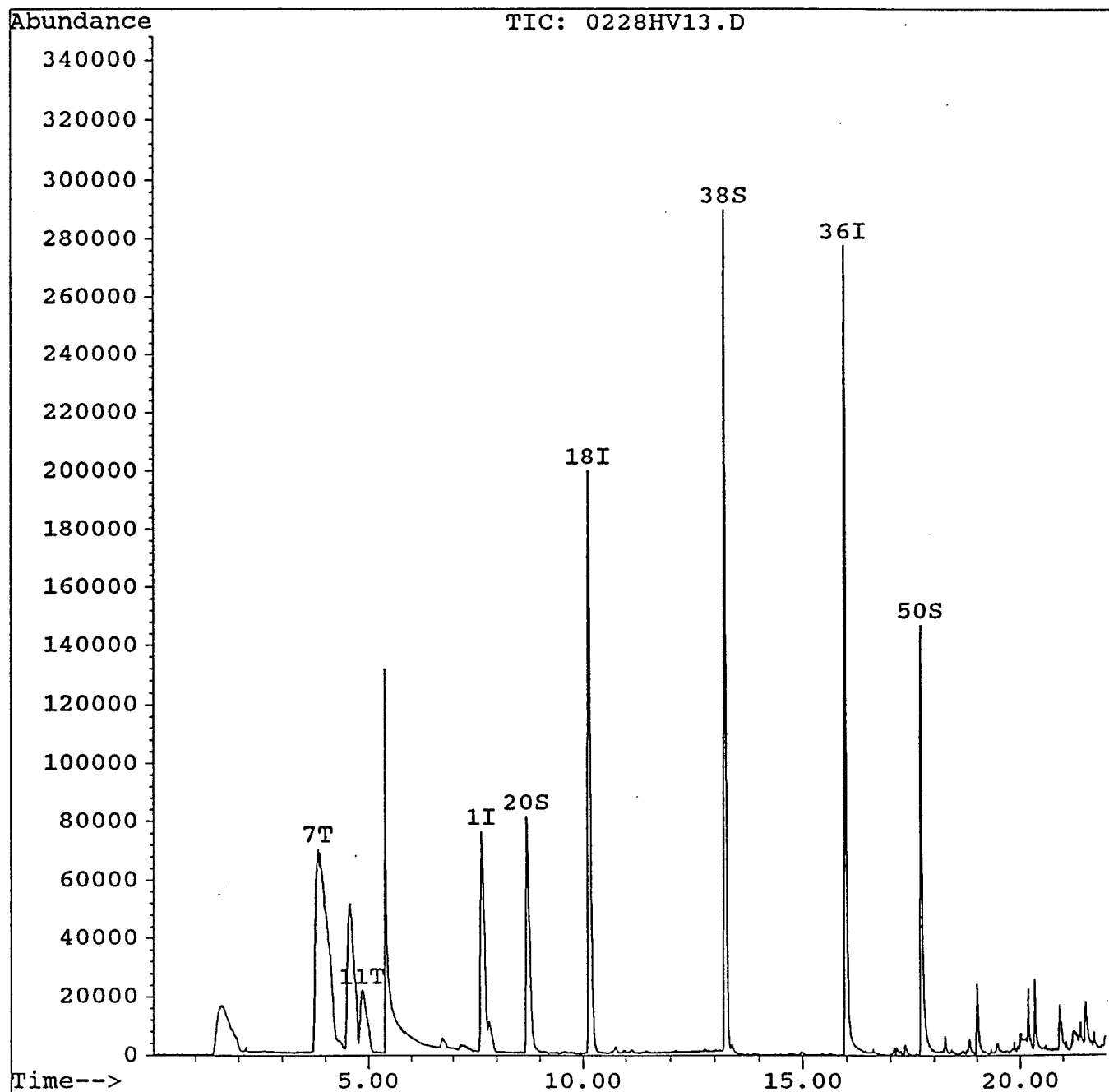
Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV13.D

Acq Time : 28 Feb 94 3:56 pm

Operator: HJV

Sample : 9402010540

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:31 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.66	130	86129	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	319065	50.00	ug/l	0
36) Chlorobenzene-d5	15.97	117	240486	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	178248	61.15	ug/l	122
38) Toluene-d8	13.25	98	305277	46.24	ug/l	92
50) Bromofluorobenzene	17.72	95	104281	39.23	ug/l	78
Target Compounds						Qva
7) Acetone	3.84	43	289499	55.64	ug/l	
11) Methylene chloride	4.84	84	50536	15.51	ug/l m	

(#) = qualifier out of range (m) = manual integration

0228HV13.D 8240.M

Wed Mar 02 08:32:37 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV14.D

Acq Time : 28 Feb 94 4:30 pm

Operator: HJV

Sample : 9402010541

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

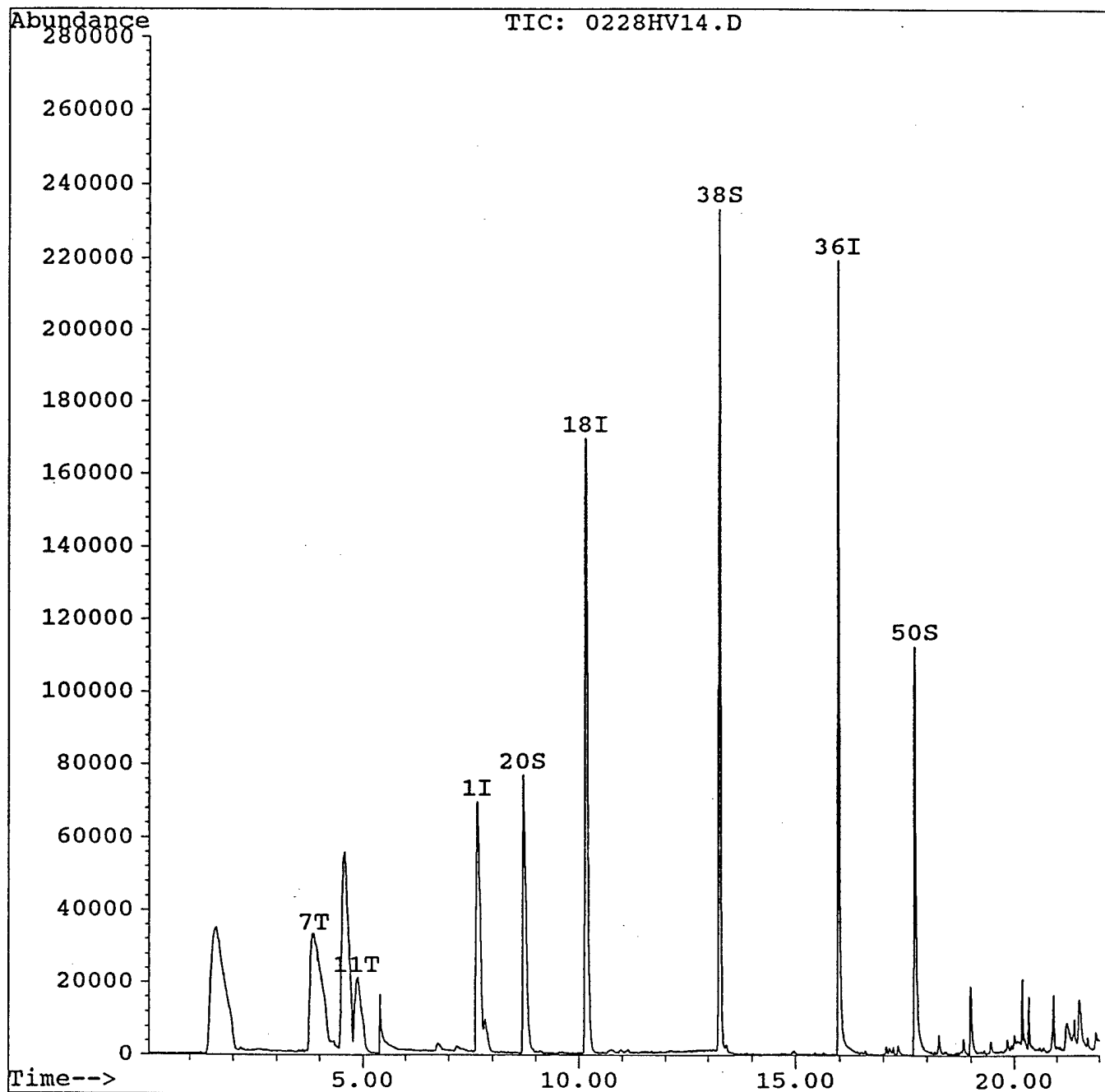
Quant Time: Mar 2 8:34 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV14.D

Acq Time : 28 Feb 94 4:30 pm

Operator: HJV

Sample : 9402010541

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:34 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(I
1) Bromochloromethane	7.66	130	75872	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	264640	50.00	ug/l	0
36) Chlorobenzene-d5	15.98	117	184195	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.71	65	147801	61.13	ug/l	122
38) Toluene-d8	13.26	98	231294	45.74	ug/l	91
50) Bromofluorobenzene	17.72	95	82894	40.72	ug/l	81
Target Compounds						Qva
7) Acetone	3.88	43	399372	87.14	ug/l m	
11) Methylene chloride	4.85	84	45016	15.69	ug/l m	

(#) = qualifier out of range (m) = manual integration

0228HV14.D 8240.M

Wed Mar 02 08:34:53 1994

GC/MS

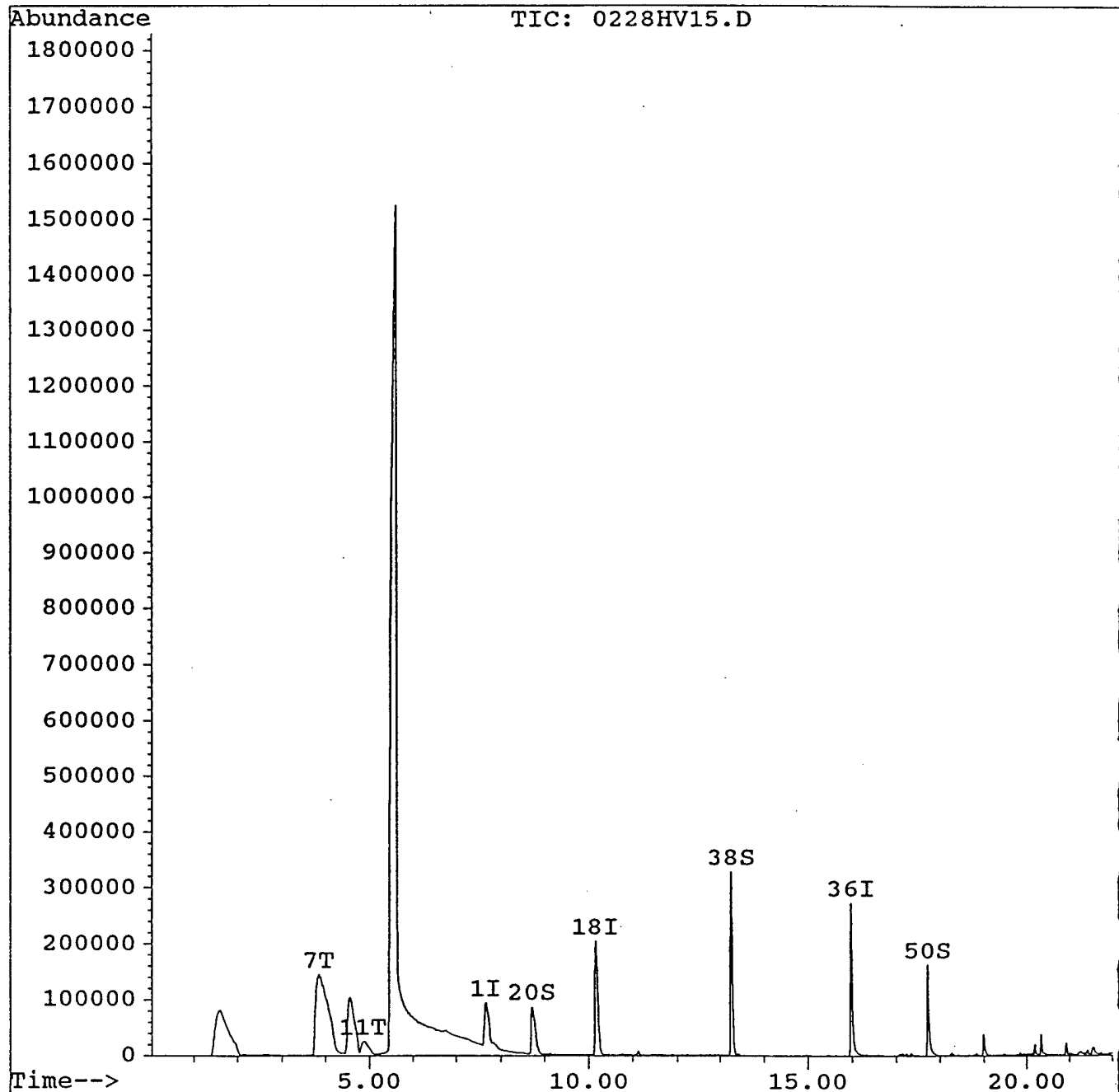
Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV15.D  
Acq Time : 28 Feb 94 5:04 pm Operator: HJV  
Sample : 9402010542 Inst : GC/MS  
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00  
Quant Time: Mar 2 8:36 1994

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV15.D  
 Acq Time : 28 Feb 94 5:04 pm  
 Sample : 9402010542  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S  
 Quant Time: Mar 2 8:36 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev
1) Bromochloromethane	7.66	130	93289	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.15	114	351145	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.98	117	246463	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	188477	58.75	ug/l	117.6
38) Toluene-d8	13.26	98	356499	52.68	ug/l	105.3
50) Bromofluorobenzene	17.72	95	108441	39.81	ug/l	79.6
Target Compounds						Qval
7) Acetone	3.86	43	1945555	345.25	ug/l m	6
11) Methylene chloride	4.85	84	53330	15.11	ug/l m	



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV16.D

Acq Time : 28 Feb 94 5:37 pm

Operator: HJV

Sample : 9402010543

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

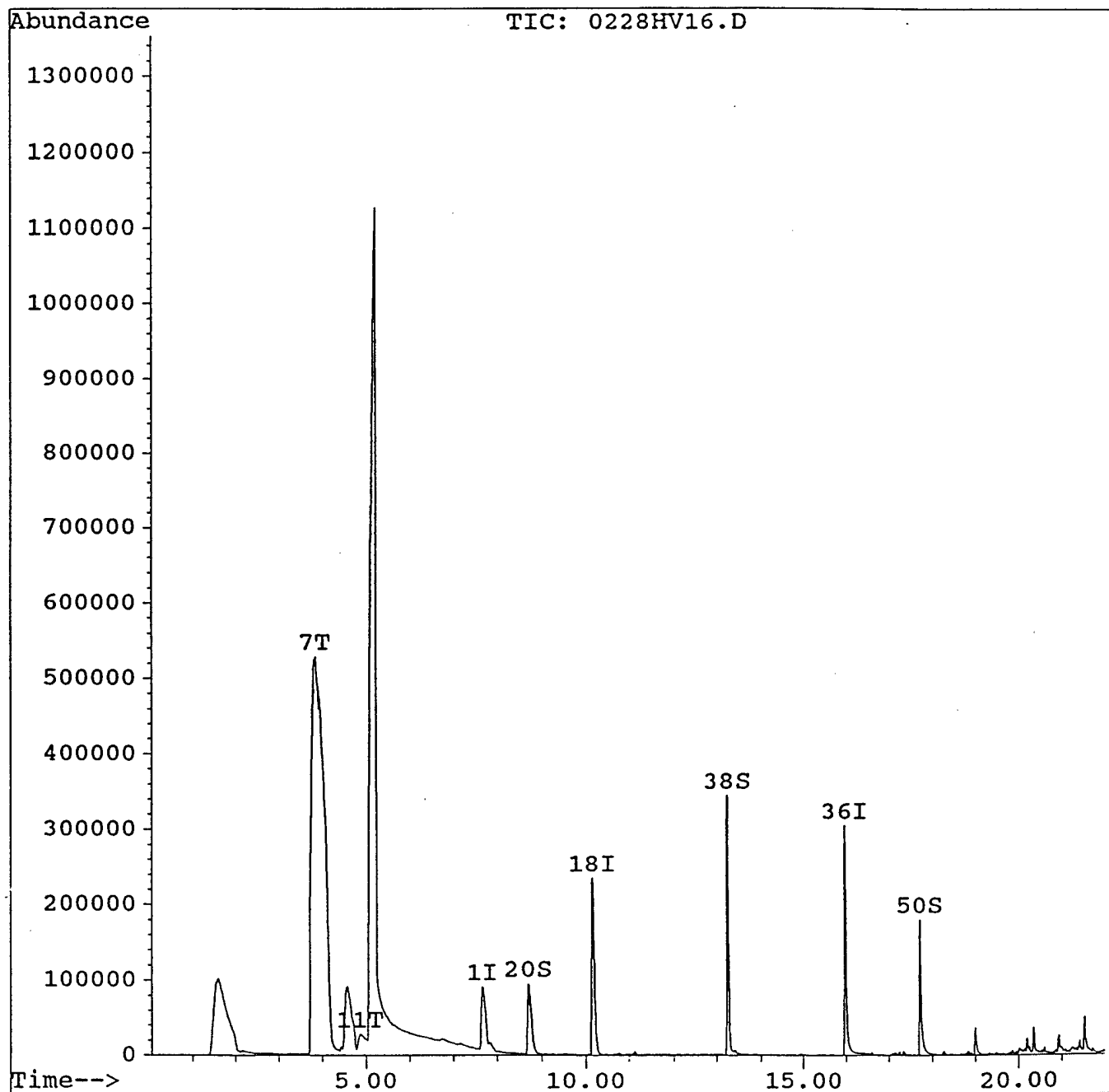
Quant Time: Mar 2 8:38 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV16.D

Acq Time : 28 Feb 94 5:37 pm

Operator: HJV

Sample : 9402010543

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Multiplr: 1.00

Quant Time: Mar 2 8:38 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	7.66	130	96484	50.00	ug/l	0.04
18) 1,4-Difluorobenzene	10.15	114	366230	50.00	ug/l	0.05
36) Chlorobenzene-d5	15.98	117	250551	50.00	ug/l	0.04
System Monitoring Compounds						%Recovery
20) 1,2-Dichloroethane-d4	8.70	65	198333	59.28	ug/l	118.55
38) Toluene-d8	13.25	98	341167	49.60	ug/l	99.19
50) Bromofluorobenzene	17.72	95	115604	41.75	ug/l	83.49
Target Compounds						Qvalue
7) Acetone	3.86	43	6882581	1180.91	ug/l m	7
11) Methylene chloride	4.85	84	56262	15.42	ug/l m	93

(#) = qualifier out of range (m) = manual integration

0228HV16.D 8240.M

Wed Mar 02 08:39:10 1994

GC/MS

Page 1



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV17.D

Acq Time : 28 Feb 94 6:11 pm

Sample : 9402010544

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:40 1994

Operator: HJV

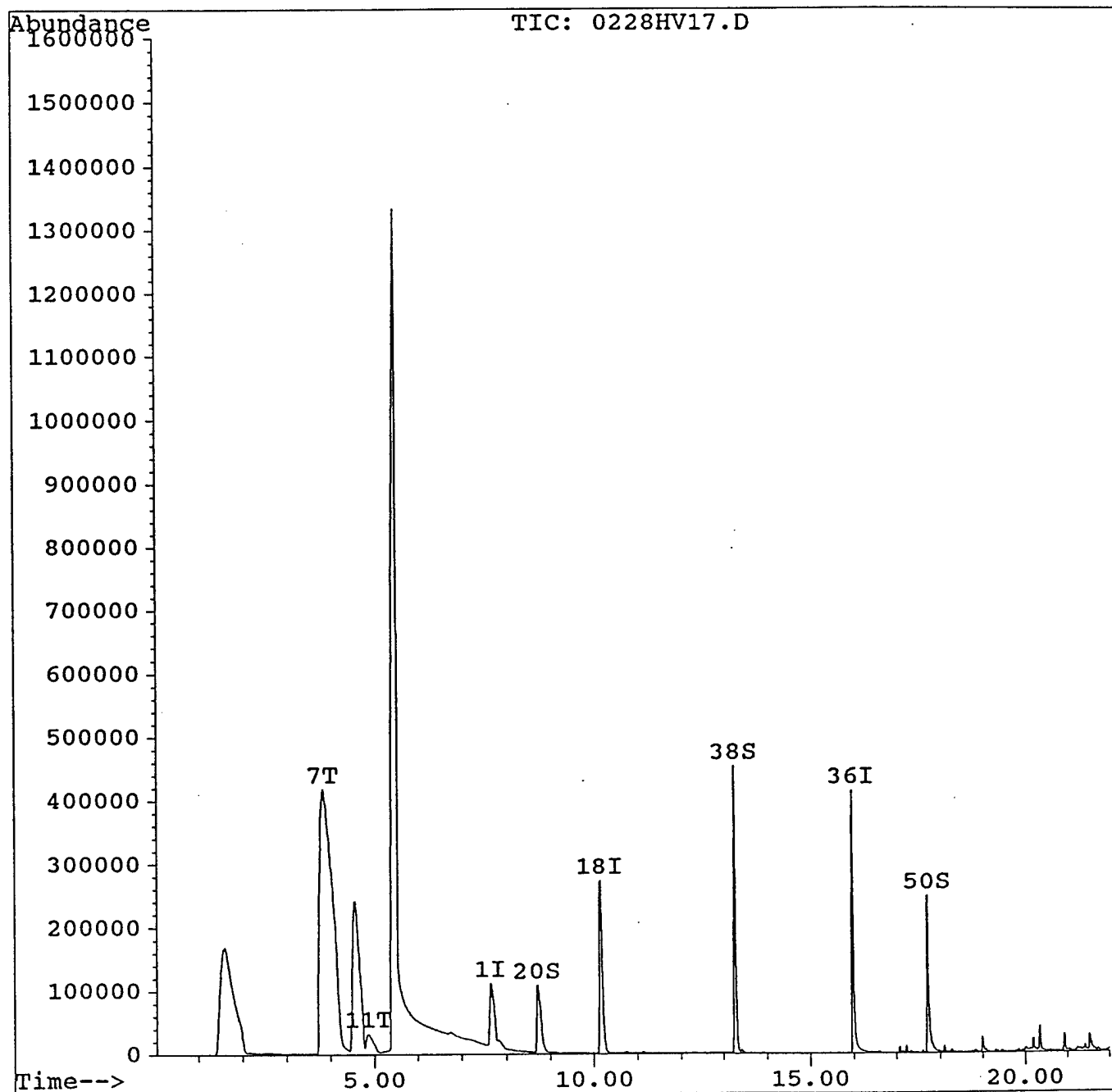
Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV17.D

Acq Time : 28 Feb 94 6:11 pm

Operator: HJV

Sample : 9402010544

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:40 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M)
1) Bromochloromethane	7.65	130	117828	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.15	114	467685	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.98	117	350946	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.70	65	239897	56.14	ug/l	112.0
38) Toluene-d8	13.26	98	476232	49.43	ug/l	98.8
50) Bromofluorobenzene	17.72	95	159843	41.21	ug/l	82.0
Target Compounds						Qvalu
7) Acetone	3.85	43	5694580	800.08	ug/l m	8
11) Methylene chloride	4.86	84	70269	15.77	ug/l	

(#) = qualifier out of range (m) = manual integration

0228HV17.D 8240.M

Wed Mar 02 08:41:15 1994

GC/MS

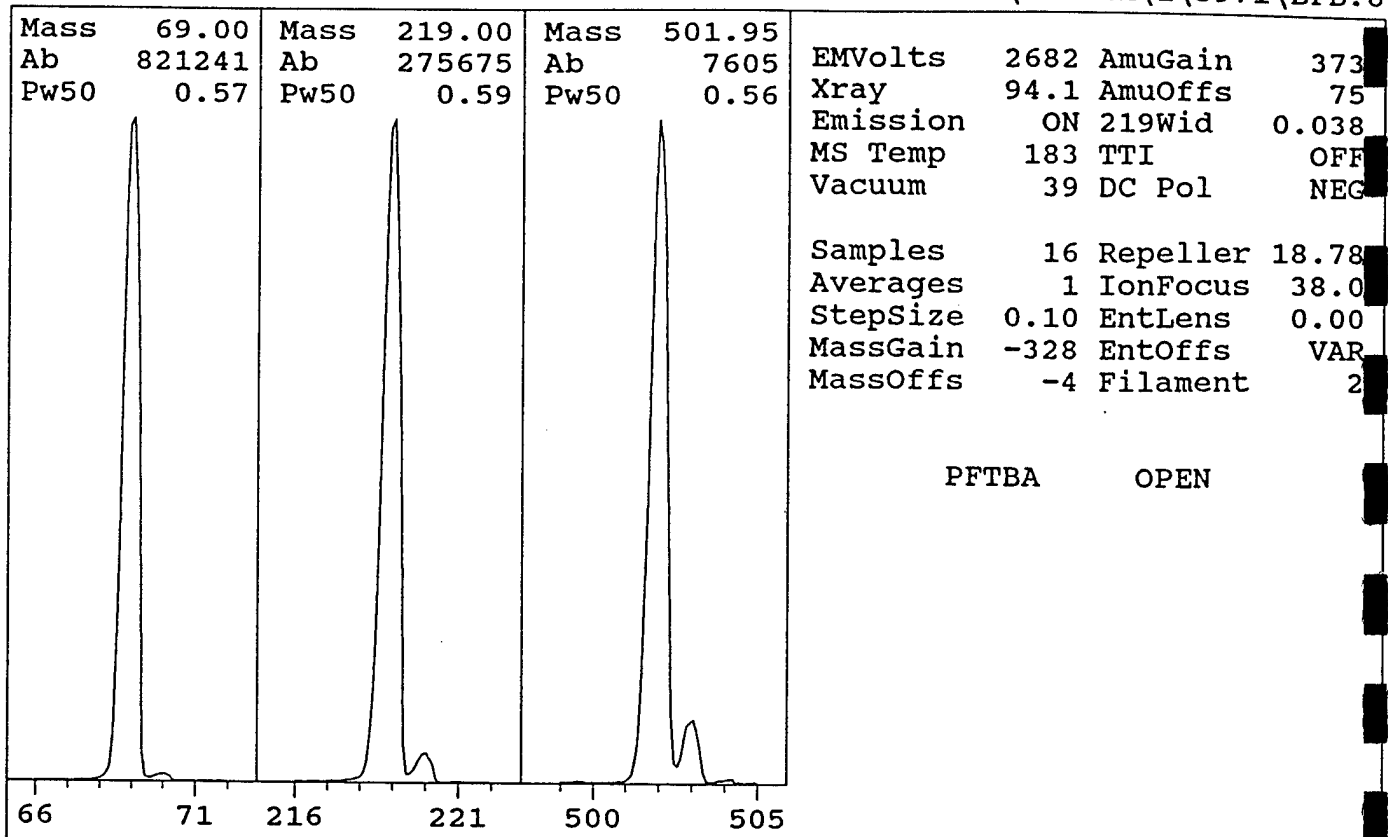
Page .



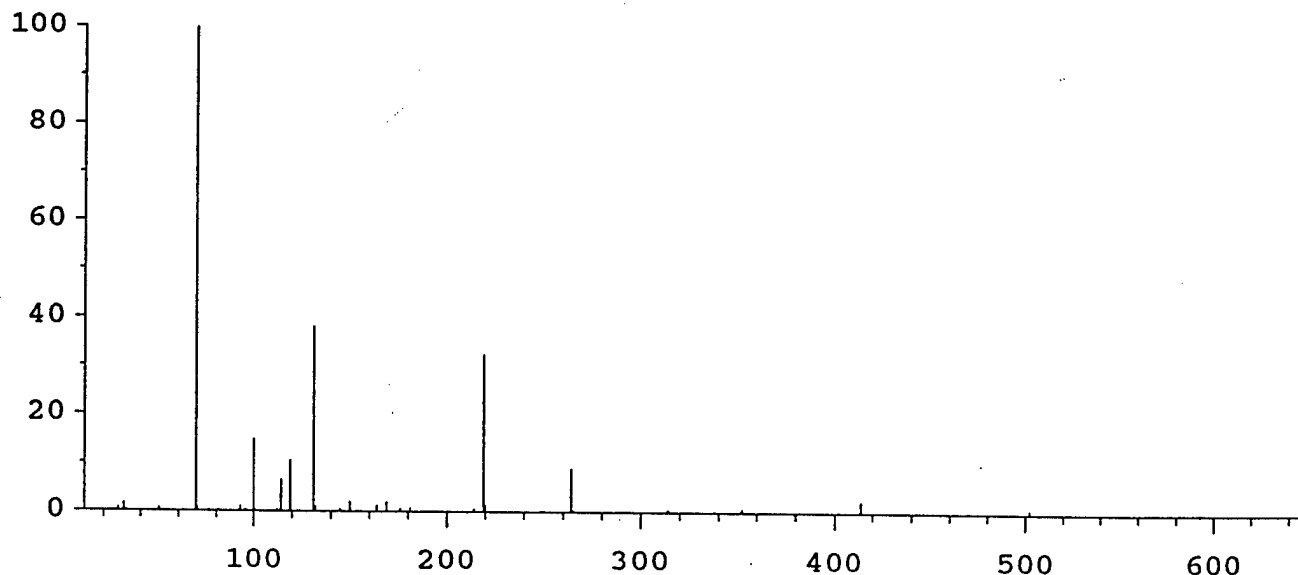
# HP5971 BFB Dynamic Target Tune

Mon Feb 28 19:30:01 1994

C:\HPCHEM\1\5971\BFB.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
110 peaks Base: 69.00 Abundance: 703744



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	703744	100.00	70.00	7559	1.07
218.95	229248	32.58	219.95	10102	4.41
502.00	6258	0.89	503.00	693	11.07

TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	15.1	19.3	23.3	16.8
TARGET ABUND(%):	100.0	35.0	30.0	0.8
ACTUAL TUNE ABUND(%):	100.0	38.3	32.6	0.9



BFB

Data File : C:\HPCHEM\1\DATA\28FEB.D

Acq Time : 28 Feb 94 7:34 pm

Sample : BFB TUNE EVALUATION

Misc : 1uL INJECTION (50ng)

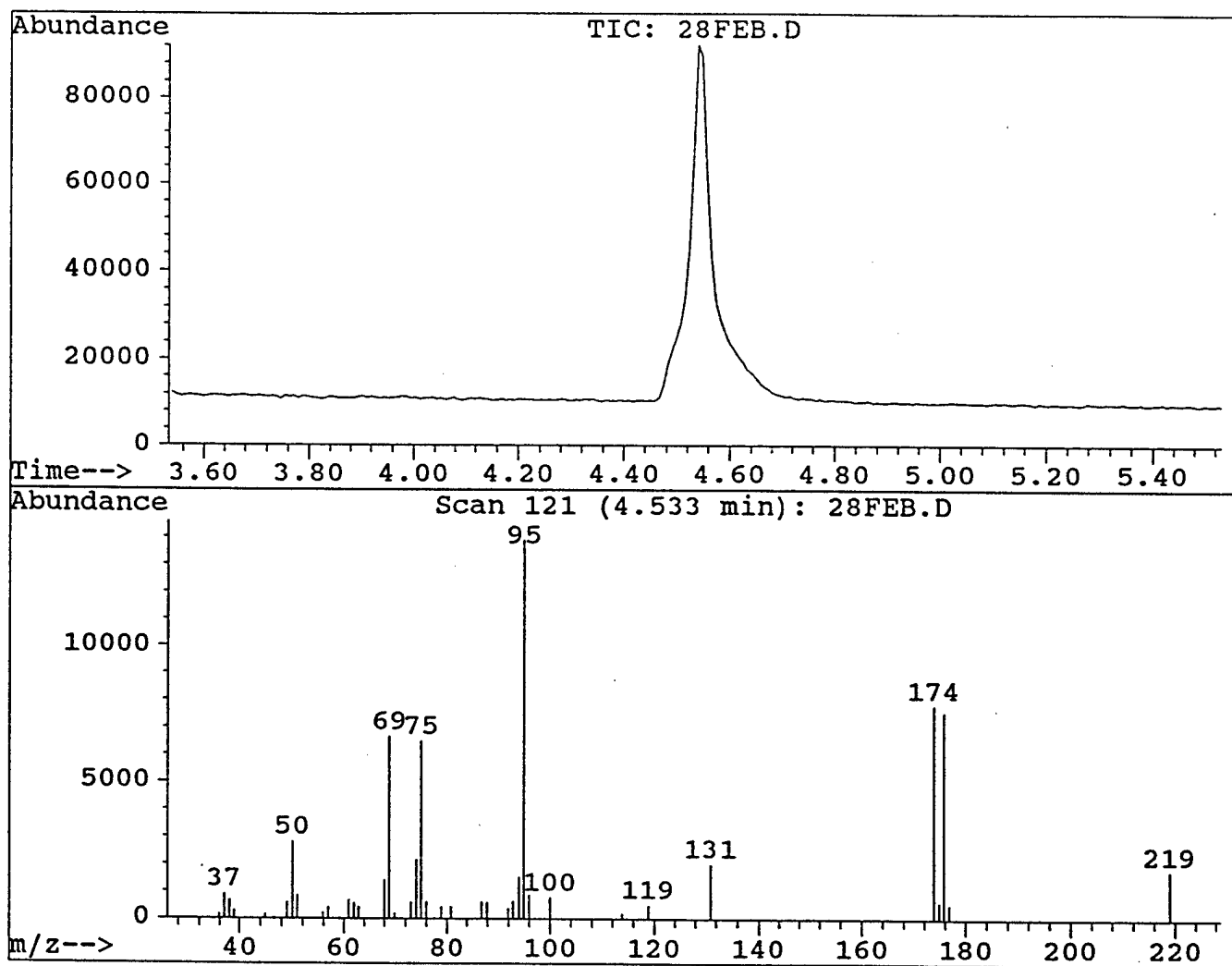
Operator: HJV

Inst : GC/MS

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\BFB624.M

Title :



Peak Apex is scan: 121

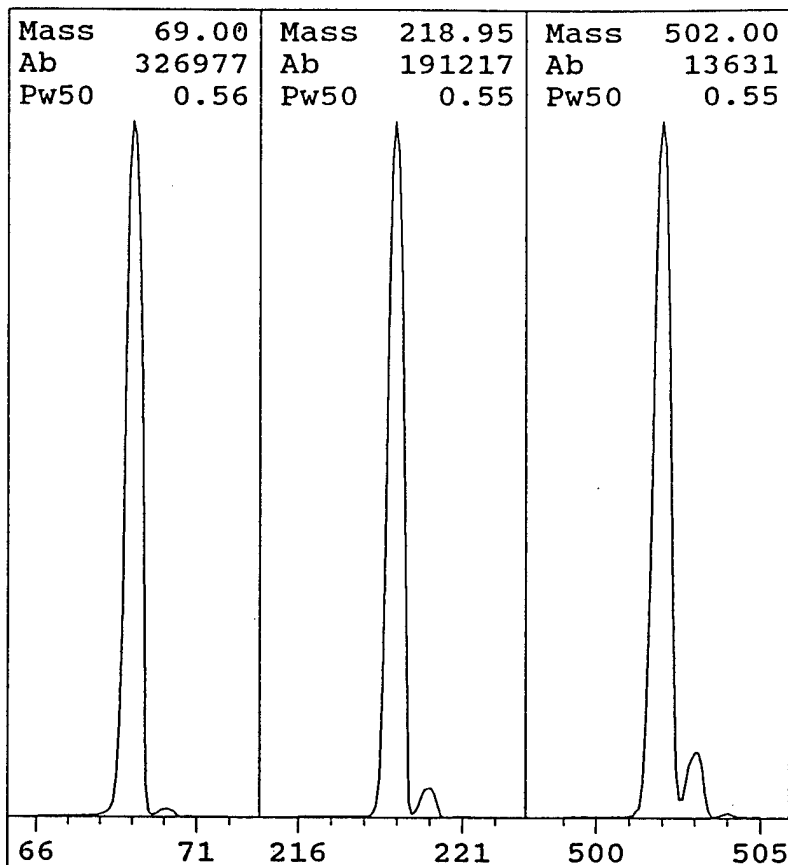
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.1	2797	PASS
75	95	30	60	46.6	6470	PASS
95	95	100	100	100.0	13895	PASS
96	95	5	9	6.2	860	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	56.2	7814	PASS
175	174	5	9	7.7	602	PASS
176	174	95	101	96.7	7559	PASS
177	176	5	9	7.0	529	PASS



Instrument: GC/MS

Mon Feb 28 19:22:16 1994

C:\HPCHEM\1\5971\ATUNE.U



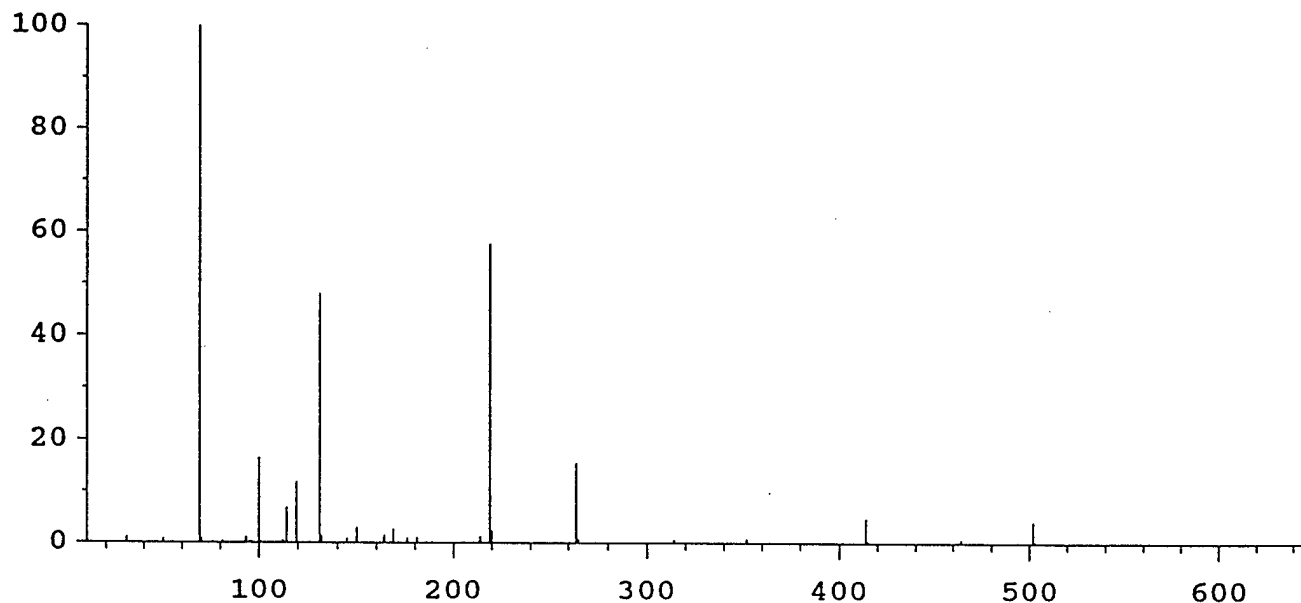
EMVolts 2635 AmuGain 371  
 Xray 98.3 AmuOffs 66  
 Emission ON 219Wid -0.039  
 MS Temp 184 TTI OFF  
 Vacuum 40 DC Pol NEG

Samples 16 Repeller 14.99  
 Averages 1 IonFocus 37.0  
 StepSize 0.10 EntLens 23.59  
 MassGain -337 EntOffs 6.27  
 MassOffs -2 Filament 2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10

87 peaks Base: 69.00 Abundance: 277888



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	277888	100.00	70.10	2989	1.08
218.90	160320	57.69	220.00	6994	4.36
501.95	11688	4.21	502.95	1118	9.57



## SEQUENCE.LOG

Simulate Run Sequence Mon Feb 28 19:48:29 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0228VOL3.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\022894\

Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
ES	1) Sample	1	0228HV18	8240	BLANK FOR VO ANALYS
	2) Sample	1	0228HV19	8240	SPCC 100PPB
	3) Sample	1	0228HV20	8240	CCC 100PPB
	4) Sample	1	0228HV21	8240	9402010551
	5) Sample	1	0228HV22	8240	9402010552
	6) Sample	1	0228HV23	8240	9402010553
	7) Sample	1	0228HV24	8240	9402010554
	8) Sample	1	0228HV25	8240	9402010555
	9) Sample	1	0228HV26	8240	9402010556
	10) Sample	1	0228HV27	8240	9402010557
	11) Sample	1	0228HV28	8240	9402010558

Bytes Needed: 550000 Space on drive C: 37601280

Sequence Verification Done!

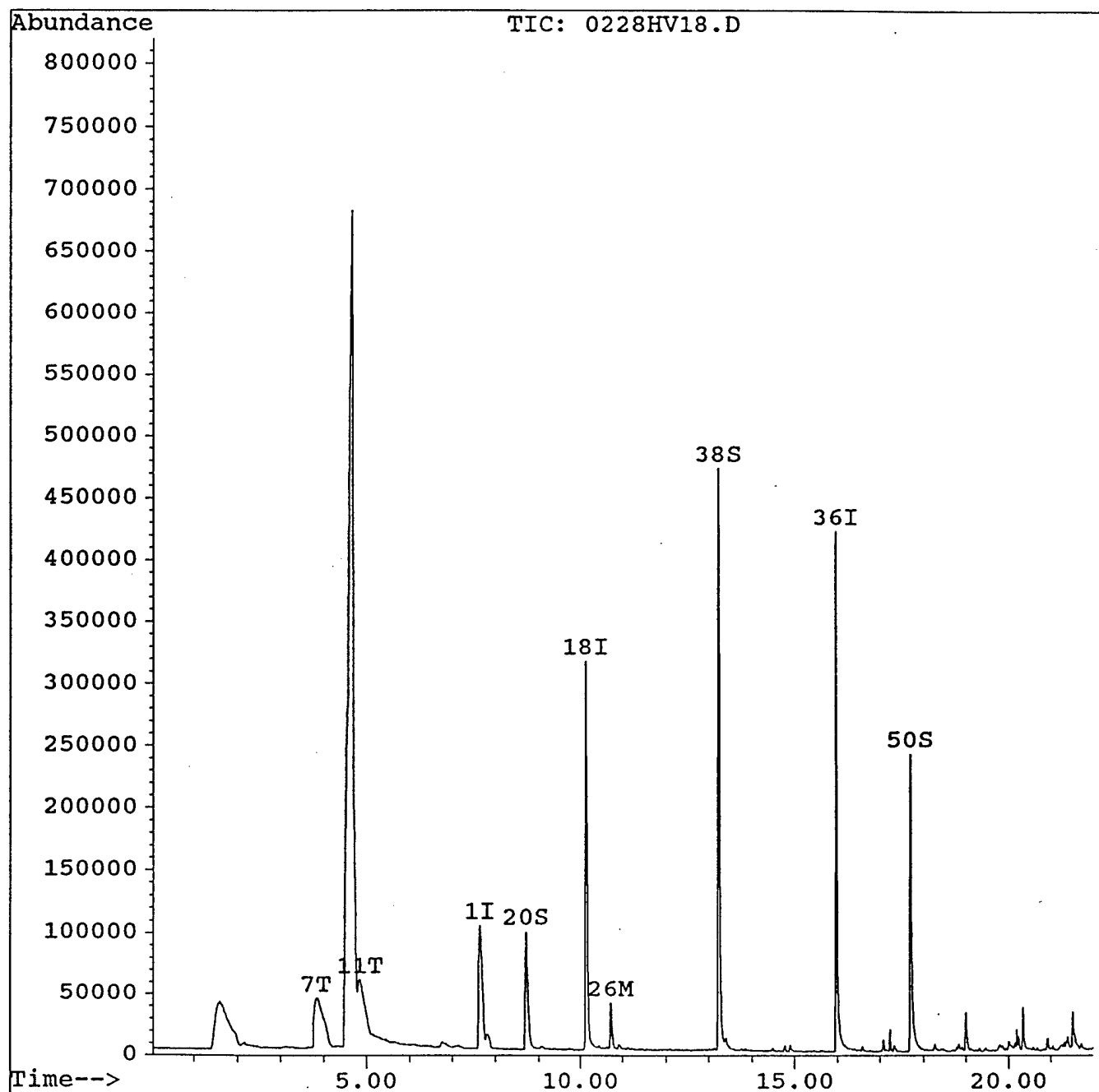


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV18.D  
Acq Time : 28 Feb 94 8:02 pm  
Sample : BLANK FOR VO ANALYSES  
Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR.  
Quant Time: Mar 2 8:42 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV18.D  
 Acq Time : 28 Feb 94 8:02 pm  
 Sample : BLANK FOR VO ANALYSES  
 Misc : 5mL MILLI Q WATER + 10uL INTSTD/SURR.  
 Quant Time: Mar 2 8:42 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev
1) Bromochloromethane	7.65	130	106266	50.00	ug/l	(
18) 1,4-Difluorobenzene	10.14	114	440406	50.00	ug/l	(
36) Chlorobenzene-d5	15.97	117	338817	50.00	ug/l	(
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	185935	46.21	ug/l	92
38) Toluene-d8	13.25	98	494570	53.17	ug/l	106
50) Bromofluorobenzene	17.72	95	148001	39.52	ug/l	79
Target Compounds						Qva
7) Acetone	3.83	43	423036	65.90	ug/l	m
11) Methylene chloride	4.86	84	65494	16.30	ug/l	
26) Trichloroethene	10.72	130	20035	7.12	ug/l	



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV19.D

Acq Time : 28 Feb 94 8:33 pm

Operator: HJV

Sample : SPCC 100PPB

Inst : GC/MS

Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT Multiplr: 1.00

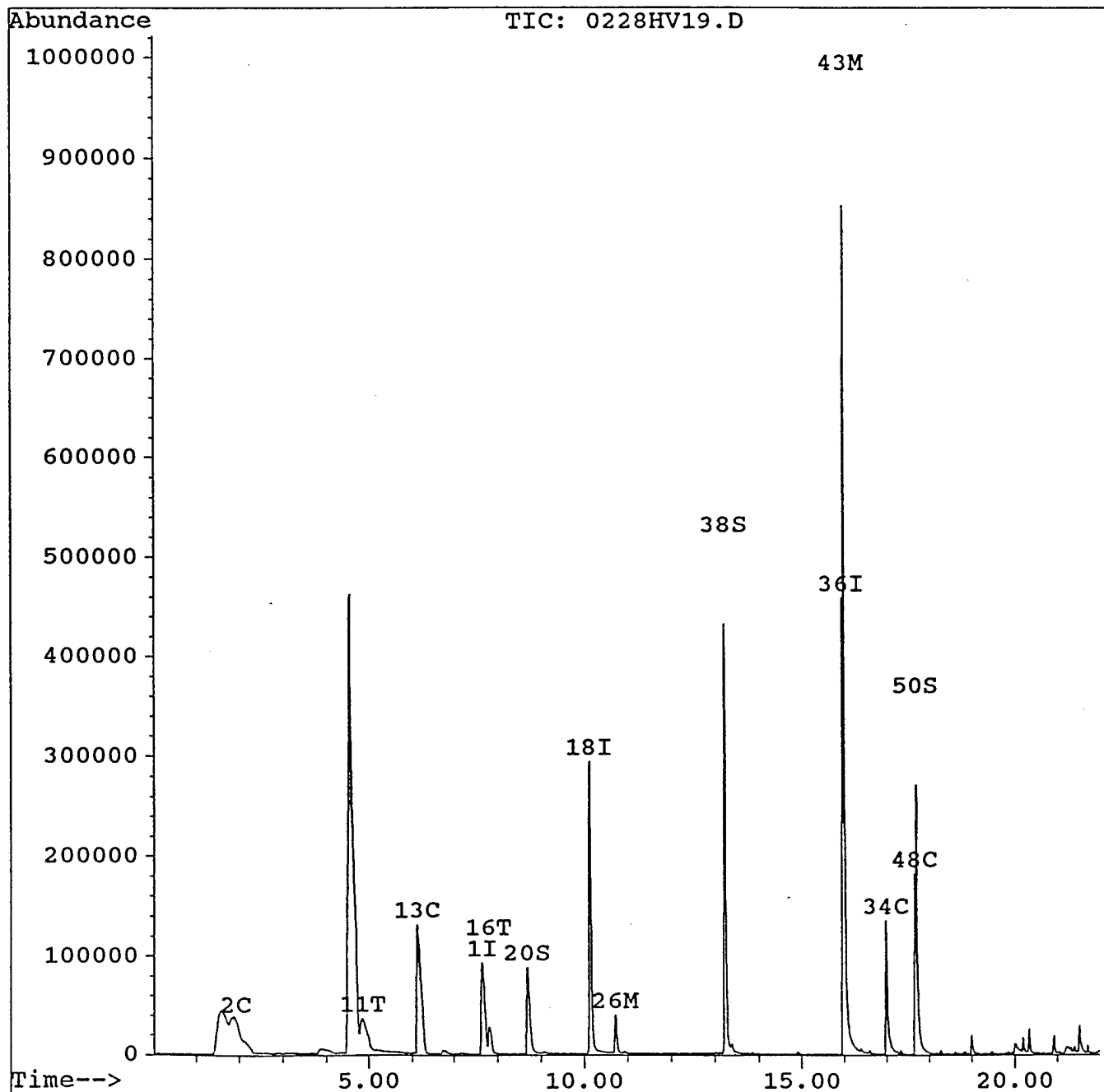
Quant Time: Mar 1 13:32 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV19.D

Acq Time : 28 Feb 94 8:33 pm

Sample : SPCC 100PPB

Misc : 5mL MILLI Q WATER + 2.5uL SPCC + 10uLINT

Quant Time: Mar 1 13:32 1994

Operator: HJV

Inst : GC/MS

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	92477	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.14	114	396421	50.00	ug/l	0.
36) Chlorobenzene-d5	15.96	117	313036	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.70	65	161036	44.46	ug/l	88.
38) Toluene-d8	13.24	98	450740	52.44	ug/l	104.
50) Bromofluorobenzene	17.71	95	165885	47.95	ug/l	95.
Target Compounds						Qval
2) Chloromethane	1.92	50	142448	106.37	ug/l m	
11) Methylene chloride	4.87	84	70919	20.28	ug/l	
13) 1,1-Dichloroethane	6.13	63	448347	104.49	ug/l #	
16) Chloroform	7.81	83	51709	9.10	ug/l	
26) Trichloroethene	10.72	130	20895	8.25	ug/l	
34) Bromoform	16.99	173	103128	55.19	ug/l m	
43) Chlorobenzene	16.01	112	590926	102.40	ug/l	
48) 1,1,2,2-Tetrachloroethane	17.67	83	153233	76.01	ug/l m	

Calculation of Response Factor:-

(1) Chloromethane  $\frac{142448 \times 50}{92477 \times 100} = 0.77 \checkmark$

(2) 1,1-Dichloroethane  $\frac{448347 \times 50}{92477 \times 100} = 2.42 \checkmark$

(3) ~~Chloro~~ Bromoform  $\frac{103128 \times 50}{396421 \times 100} = 0.13 \text{ out}$

(4) Chlorobenzene  $\frac{590926 \times 50}{313036 \times 100} = 0.94$

(5) 1,1,2,2-Tetra chloroethane  $\frac{153233 \times 50}{313036 \times 100} = 0.25$

(#) = qualifier out of range (m) = manual integration

0228HV19.D 8240.M

Tue Mar 01 13:33:31 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV20.D

Acq Time : 28 Feb 94 9:05 pm

Sample : CCC 100PPB

Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR

Quant Time: Mar 1 13:37 1994

Operator: HJV

Inst : GC/MS

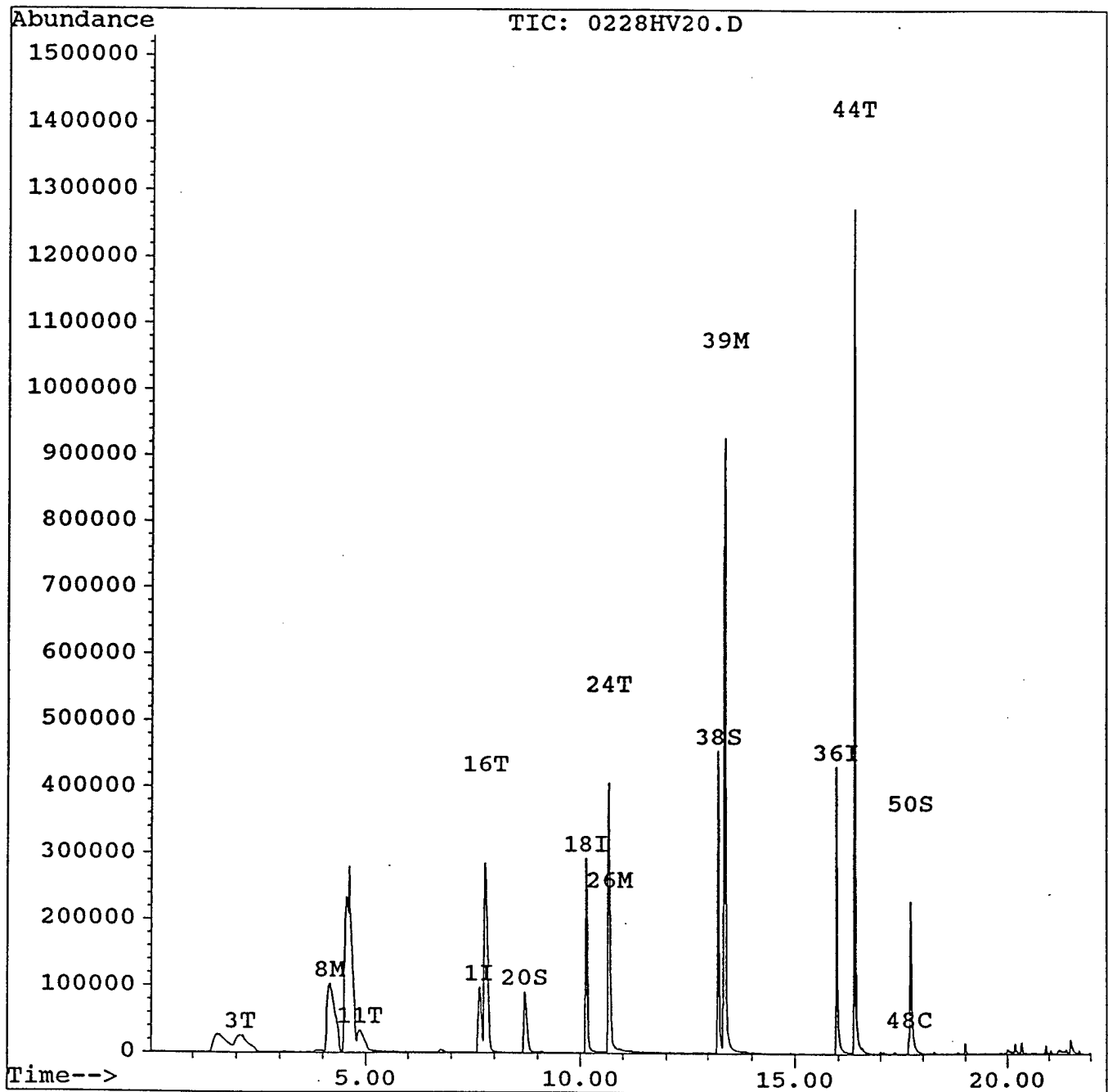
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV20.D  
 Acq Time : 28 Feb 94 9:05 pm  
 Sample : CCC 100PPB  
 Misc : 5mL WATER + 2.5uL CCC + 10uL INTSTD/SURR  
 Quant Time: Mar 1 13:37 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.65	130	99082	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.13	114	396336	50.00	ug/l	0
36) Chlorobenzene-d5	15.96	117	324130	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.69	65	177868	49.12	ug/l	98
38) Toluene-d8	13.24	98	446581	50.18	ug/l	100
50) Bromofluorobenzene	17.71	95	153095	42.73	ug/l	85
Target Compounds						Qva
3) Vinyl chloride	2.08	62	249135	105.75	ug/l m	
8) 1,1-Dichloroethene	4.17	61	430265	100.34	ug/l m	
11) Methylene chloride	4.86	84	72271	19.29	ug/l #	
16) Chloroform	7.79	83	610582	100.28	ug/l	
24) 1,2-Dichloropropane	10.66	63	199821	100.93	ug/l m	
26) Trichloroethene	10.70	130	18793	7.42	ug/l m	
39) Toluene	13.39	92	616982	95.76	ug/l	
44) Ethylbenzene	16.39	106	303046	104.60	ug/l	
48) 1,1,2,2-Tetrachloroethane	17.67	83	22905	10.97	ug/l m	

## Calculation of Response Factor

$$(1) \text{ Vinyl chloride } \frac{249135 \times 50}{99082 \times 100} = 1.257$$

$$\text{Calc. of \% R.F.} \\ \frac{1.189}{0.956} - 1.25 \times 100 = 1.189$$

$$(2) \text{ 1,1-Dichloroethene } \frac{430265 \times 50}{99082 \times 100} = 2.171$$

$$\frac{2.164 - 2.171 \times 100}{2.164} =$$

$$(3) \text{ Chloroform } \frac{610582 \times 50}{99082 \times 100} = 3.081$$

$$\frac{3.073 - 3.081 \times 100}{3.073} = 0$$

$$(4) \text{ 1,2-Dichloropropane } \frac{199821 \times 50}{396336 \times 100} = 0.252$$

$$\frac{0.250 - 0.252 \times 100}{0.250} = 0$$

$$(5) \text{ Toluene } \frac{616982 \times 50}{324130 \times 100} = 0.952$$

$$\frac{0.994 - 0.952 \times 100}{0.994} = 4$$

$$(6) \text{ Ethyl Benzene } \frac{303046 \times 50}{324130 \times 100} = 0.467$$

$$\frac{0.447 - 0.467 \times 100}{0.447} = 4$$

CCC's ALL CLEARED



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV21.D

Acq Time : 28 Feb 94 9:39 pm

Sample : 9402010551

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Quant Time: Mar 2 8:44 1994

Operator: HJV

Inst : GC/MS

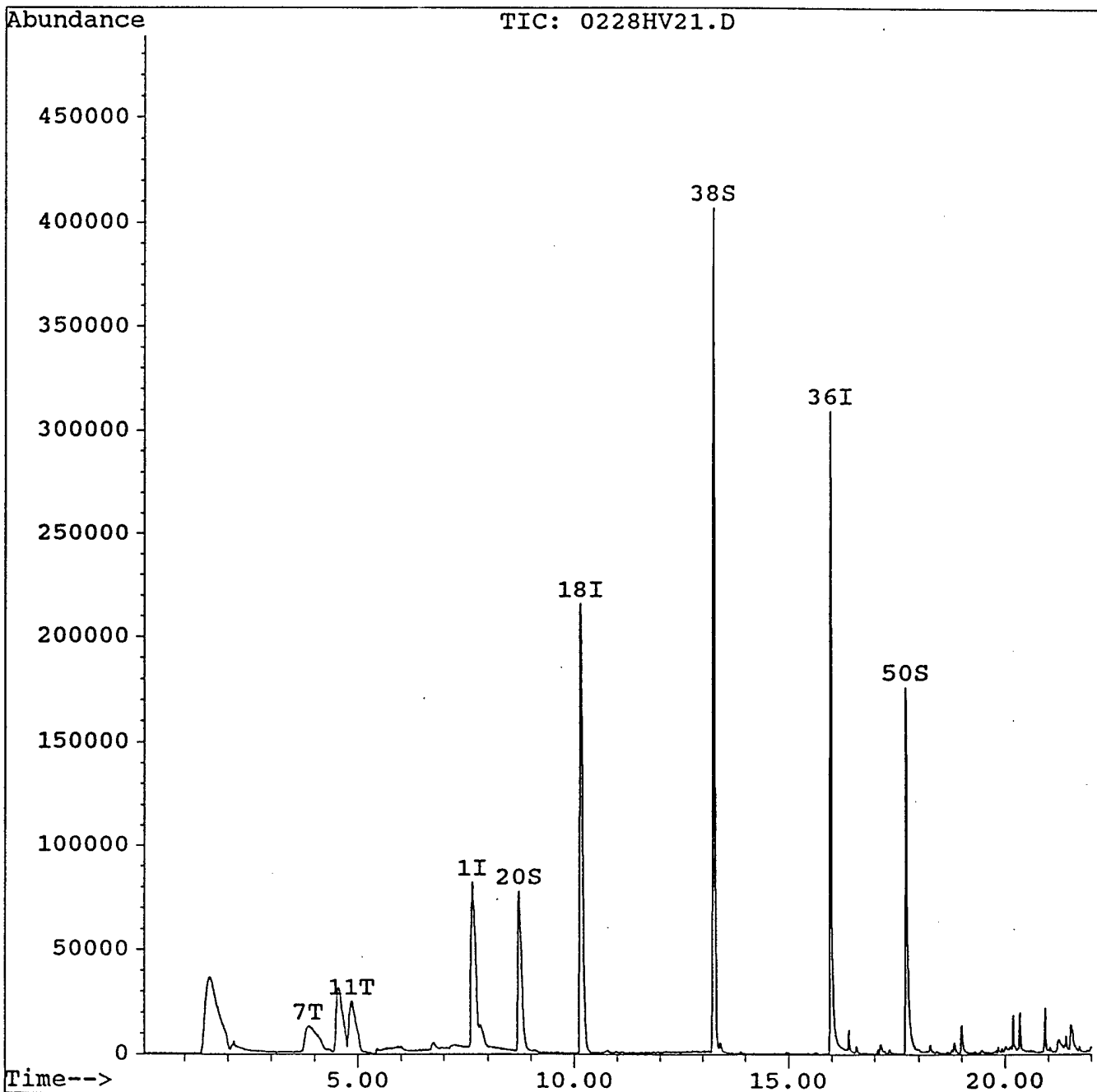
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV21.D

Acq Time : 28 Feb 94 9:39 pm

Operator: HJV

Sample : 9402010551

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:44 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(1
1) Bromochloromethane	7.66	130	98487	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	421523	50.00	ug/l	0
36) Chlorobenzene-d5	15.98	117	299691	50.00	ug/l	0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	196760	51.09	ug/l	102
38) Toluene-d8	13.25	98	462713	56.24	ug/l	112
50) Bromofluorobenzene	17.72	95	136465	41.20	ug/l	82
Target Compounds						Qval
7) Acetone	3.87	43	160418	26.96	ug/l m	
11) Methylene chloride	4.84	84	65295	17.53	ug/l	

(#) = qualifier out of range (m) = manual integration

0228HV21.D 8240.M

Wed Mar 02 08:45:33 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV22.D

Acq Time : 28 Feb 94 10:12 pm

Operator: HJV

Sample : 9402010552

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

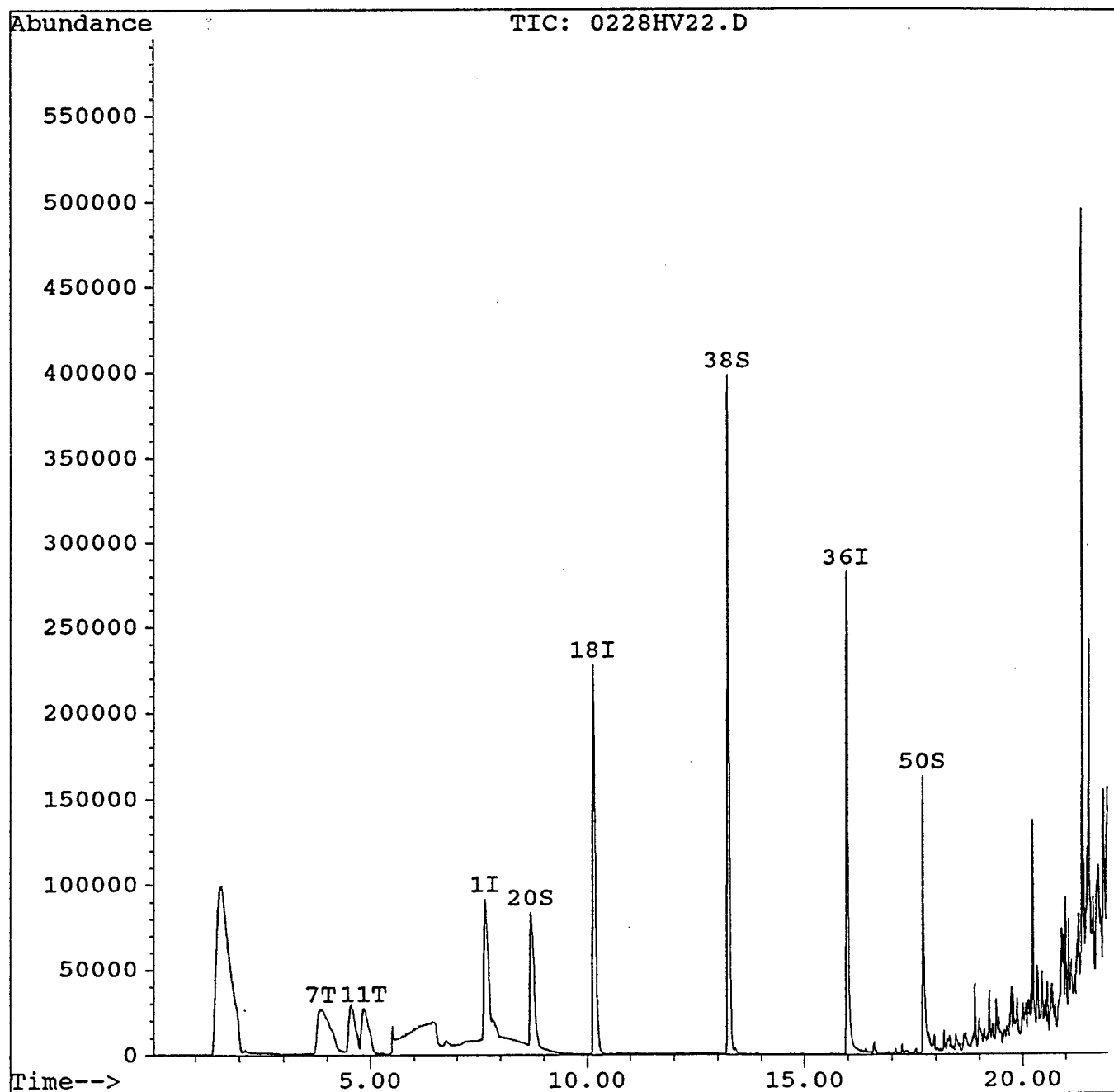
Quant Time: Mar 2 8:46 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV22.D

Acq Time : 28 Feb 94 10:12 pm

Operator: HJV

Sample : 9402010552

Inst : GC/M

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:46 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev/M
1) Bromochloromethane	7.65	130	105044	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	455781	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	280091	50.00	ug/l	
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.70	65	205619	49.38	ug/l	9.
38) Toluene-d8	13.25	98	466653	60.68	ug/l	12.
50) Bromofluorobenzene	17.72	95	128562	41.53	ug/l	83.
Target Compounds						Qv
7) Acetone	3.87	43	346026	54.53	ug/l m	
11) Methylene chloride	4.84	84	70725	17.80	ug/l	

(#) = qualifier out of range (m) = manual integration

0228HV22.D 8240.M

Wed Mar 02 08:47:21 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV23.D

Acq Time : 28 Feb 94 10:46 pm

Operator: HJV

Sample : 9402010553

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

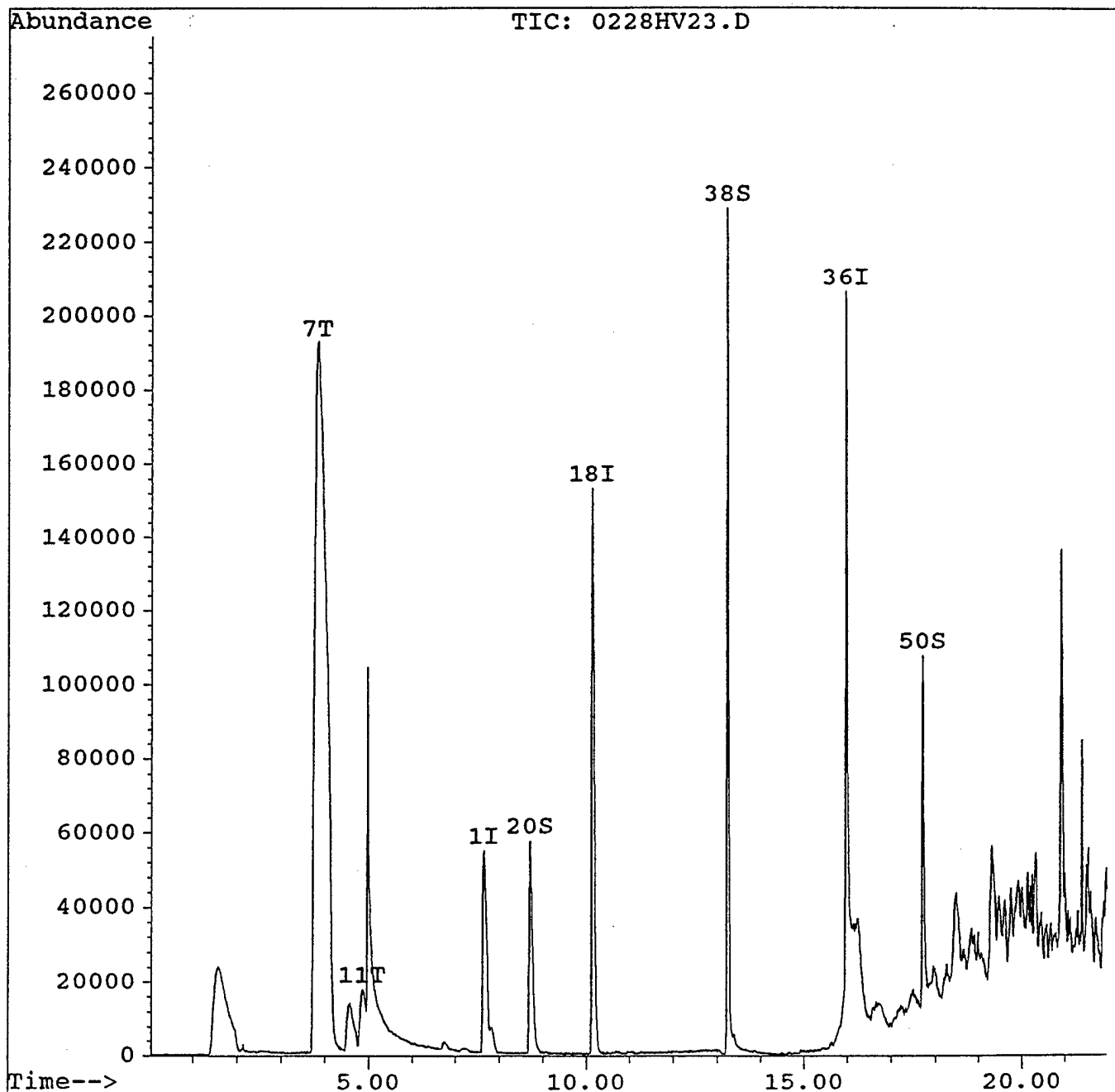
Quant Time: Mar 2 8:48 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV23.D  
 Acq Time : 28 Feb 94 10:46 pm  
 Sample : 9402010553  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S  
 Quant Time: Mar 2 8:48 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Mi
1) Bromochloromethane	7.65	130	66219	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.15	114	260041	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.97	117	179095	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	132505	55.77	ug/l	111.5
38) Toluene-d8	13.24	98	251665	51.18	ug/l	102.3
50) Bromofluorobenzene	17.71	95	102174	51.62	ug/l	103.2
Target Compounds						Qva
7) Acetone	3.82	43	2353854	588.46	ug/l m	5
11) Methylene chloride	4.85	84	40169	16.04	ug/l m	5



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV24.D

Acq Time : 28 Feb 94 11:19 pm

Sample : 9402010554

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:51 1994

Operator: HJV

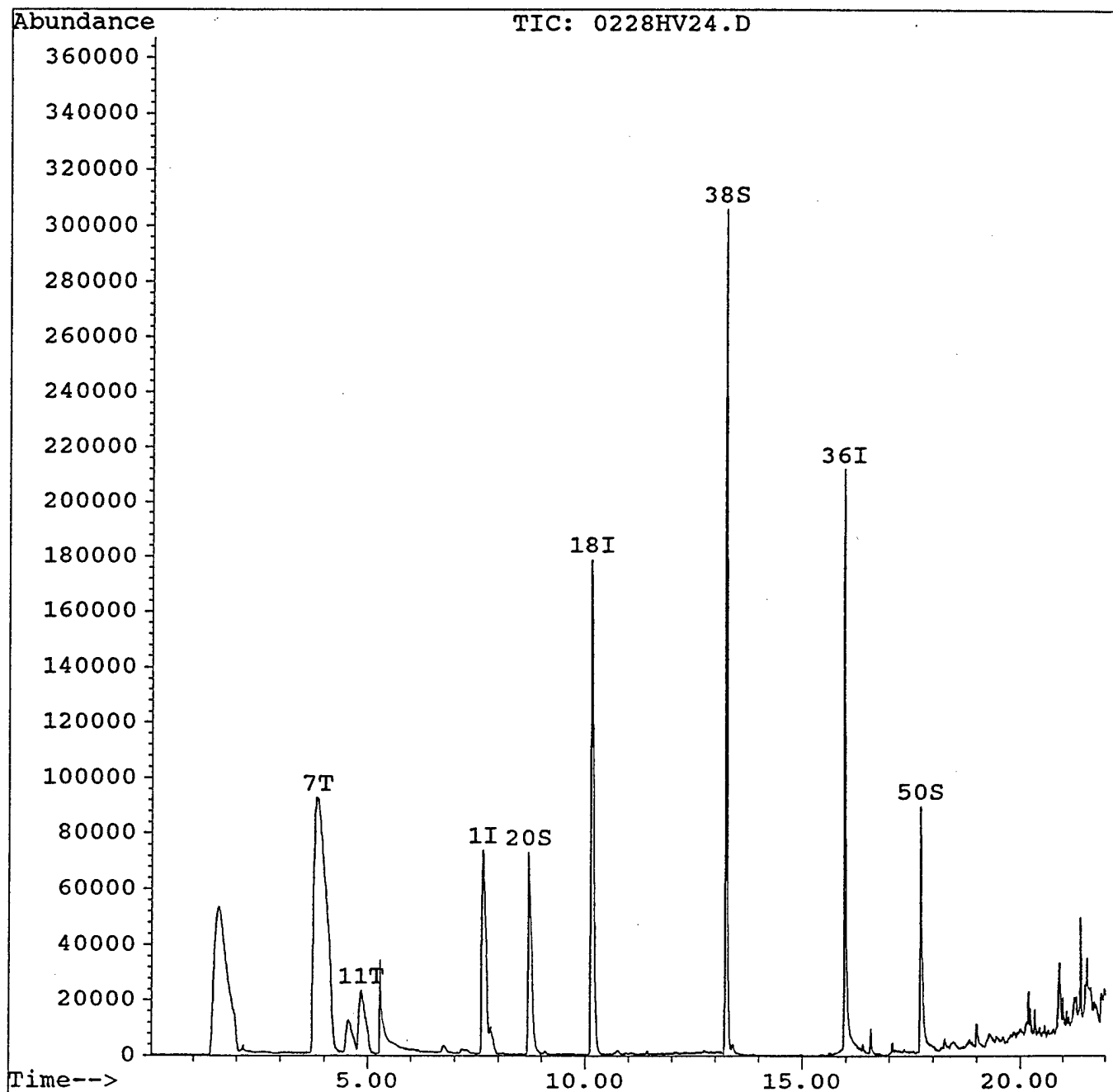
Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





## Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV24.D

Acq Time : 28 Feb 94 11:19 pm

Operator: HJV

Sample : 9402010554

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:51 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.65	130	87375	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	324695	50.00	ug/l	0
36) Chlorobenzene-d5	15.97	117	191376	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	171598	57.85	ug/l	15
38) Toluene-d8	13.25	98	314718	59.90	ug/l	9
50) Bromofluorobenzene	17.72	95	90086	42.59	ug/l	85
Target Compounds						Qa
7) Acetone	3.85	43	1184069	224.34	ug/l m	
11) Methylene chloride	4.85	84	58019	17.56	ug/l	

-----  
(#) = qualifier out of range (m) = manual integration

0228HV24.D 8240.M

Wed Mar 02 08:51:49 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV25.D

Acq Time : 28 Feb 94 11:53 pm

Sample : 9402010555

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Quant Time: Mar 2 8:53 1994

Operator: HJV

Inst : GC/MS

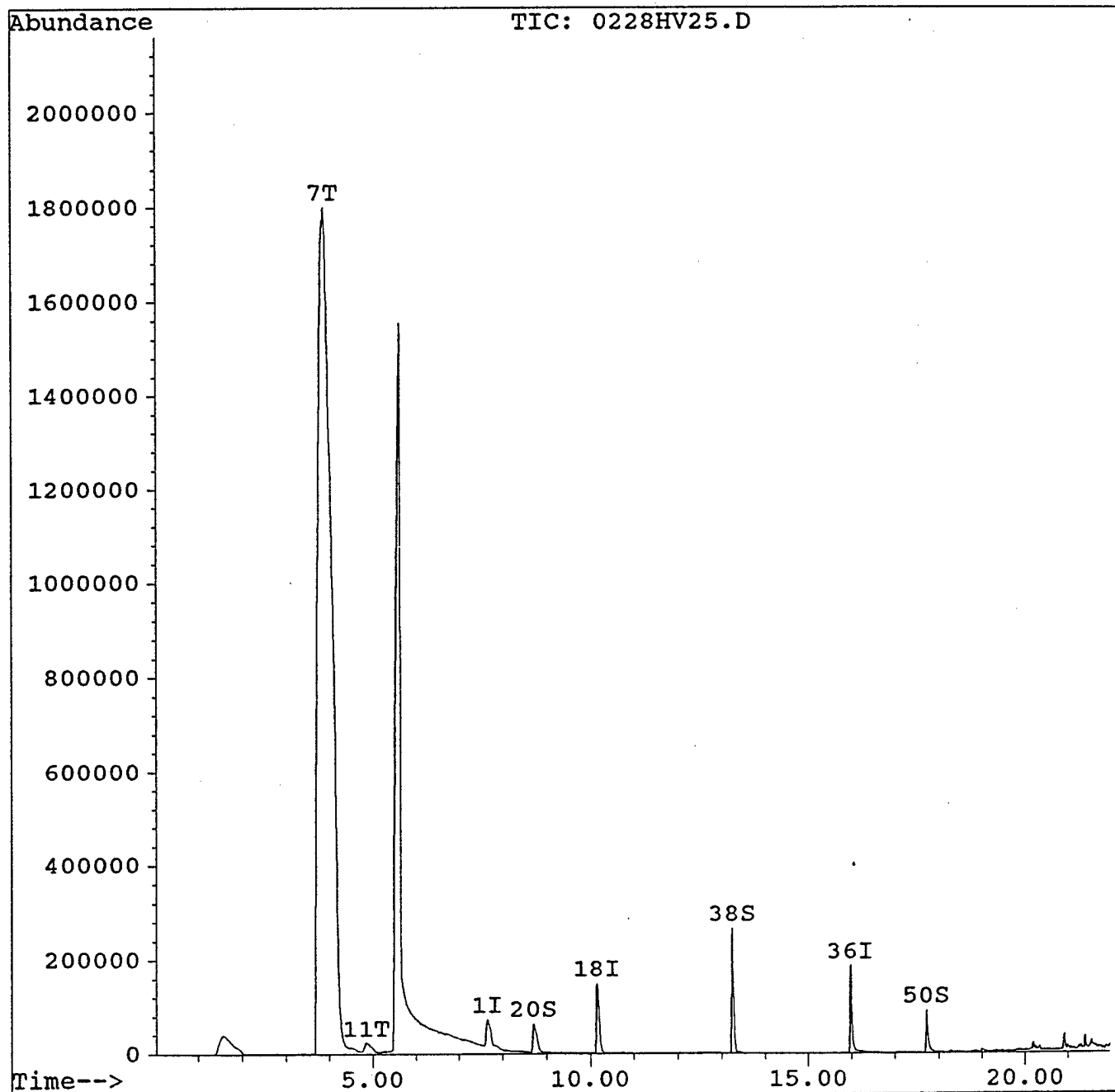
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV25.D  
 Acq Time : 28 Feb 94 11:53 pm  
 Sample : 9402010555  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S  
 Quant Time: Mar 2 8:53 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	72048	50.00	ug/l	0.03
18) 1,4-Difluorobenzene	10.15	114	289741	50.00	ug/l	0.15
36) Chlorobenzene-d5	15.98	117	194943	50.00	ug/l	0.11
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	155256	58.65	ug/l	117.10
38) Toluene-d8	13.25	98	307732	57.50	ug/l	114.19
50) Bromofluorobenzene	17.72	95	83555	38.78	ug/l	77.56
Target Compounds						Qual
7) Acetone	3.88	43	26025011	5979.85	ug/l m	7
11) Methylene chloride	4.86	84	46582	17.09	ug/l	3

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV26.D

Acq Time : 1 Mar 94 12:26 am

Sample : 9402010556

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:55 1994

Operator: HJV

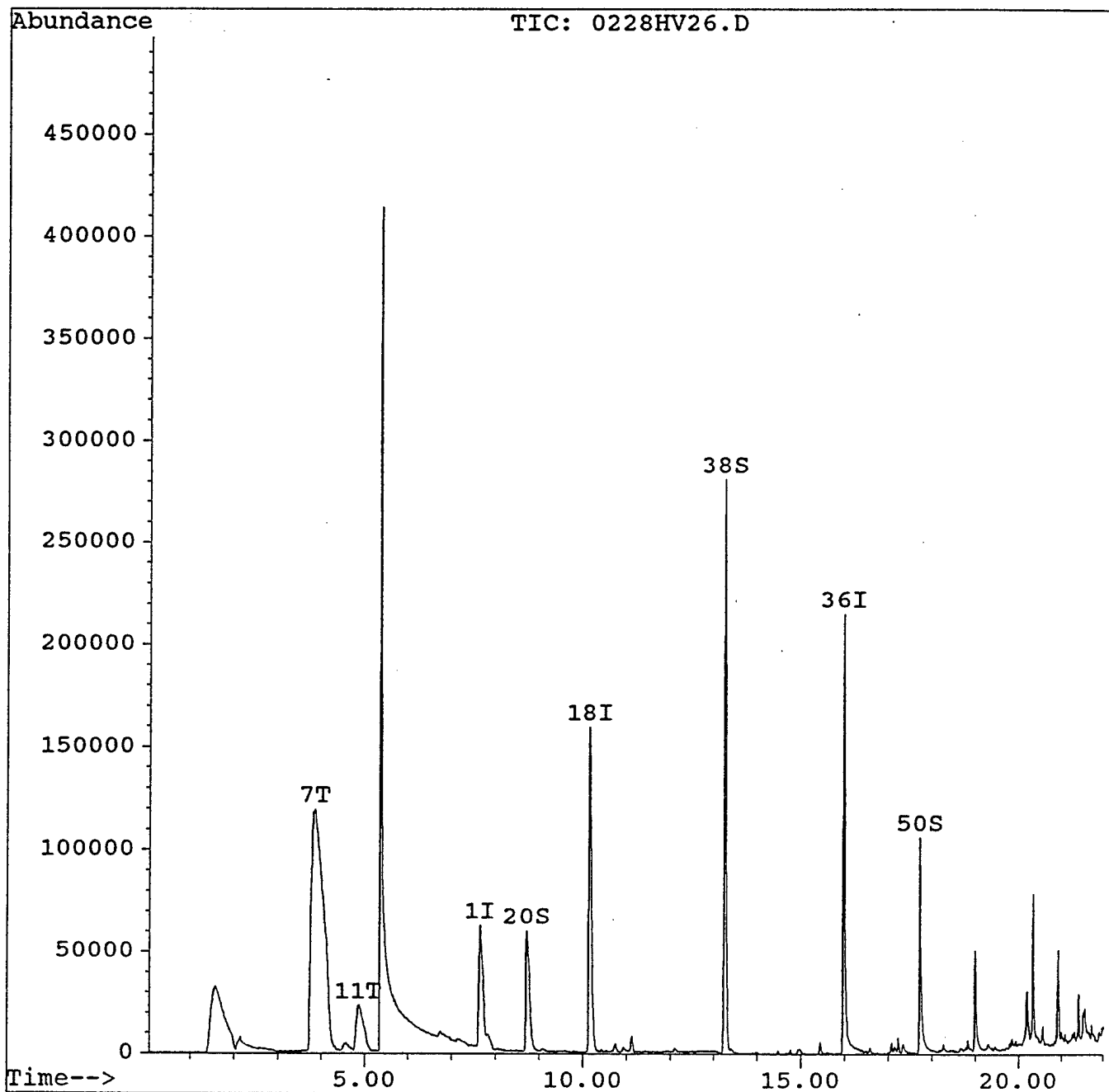
Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV26.D  
 Acq Time : 1 Mar 94 12:26 am Operator: HJV  
 Sample : 9402010556 Inst : GC/MS  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00  
 Quant Time: Mar 2 8:55 1994

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev
1) Bromochloromethane	7.65	130	73461	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	291509	50.00	ug/l	0
36) Chlorobenzene-d5	15.97	117	208027	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.70	65	145924	54.79	ug/l	109
38) Toluene-d8	13.25	98	300029	52.53	ug/l	105
50) Bromofluorobenzene	17.72	95	96569	42.00	ug/l	84
Target Compounds						Qva
7) Acetone	3.85	43	1515394	341.50	ug/l m	8
11) Methylene chloride	4.84	84	46784	16.84	ug/l m	3

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV27.D

Acq Time : 1 Mar 94 1:00 am

Operator: HJV

Sample : 9402010557

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

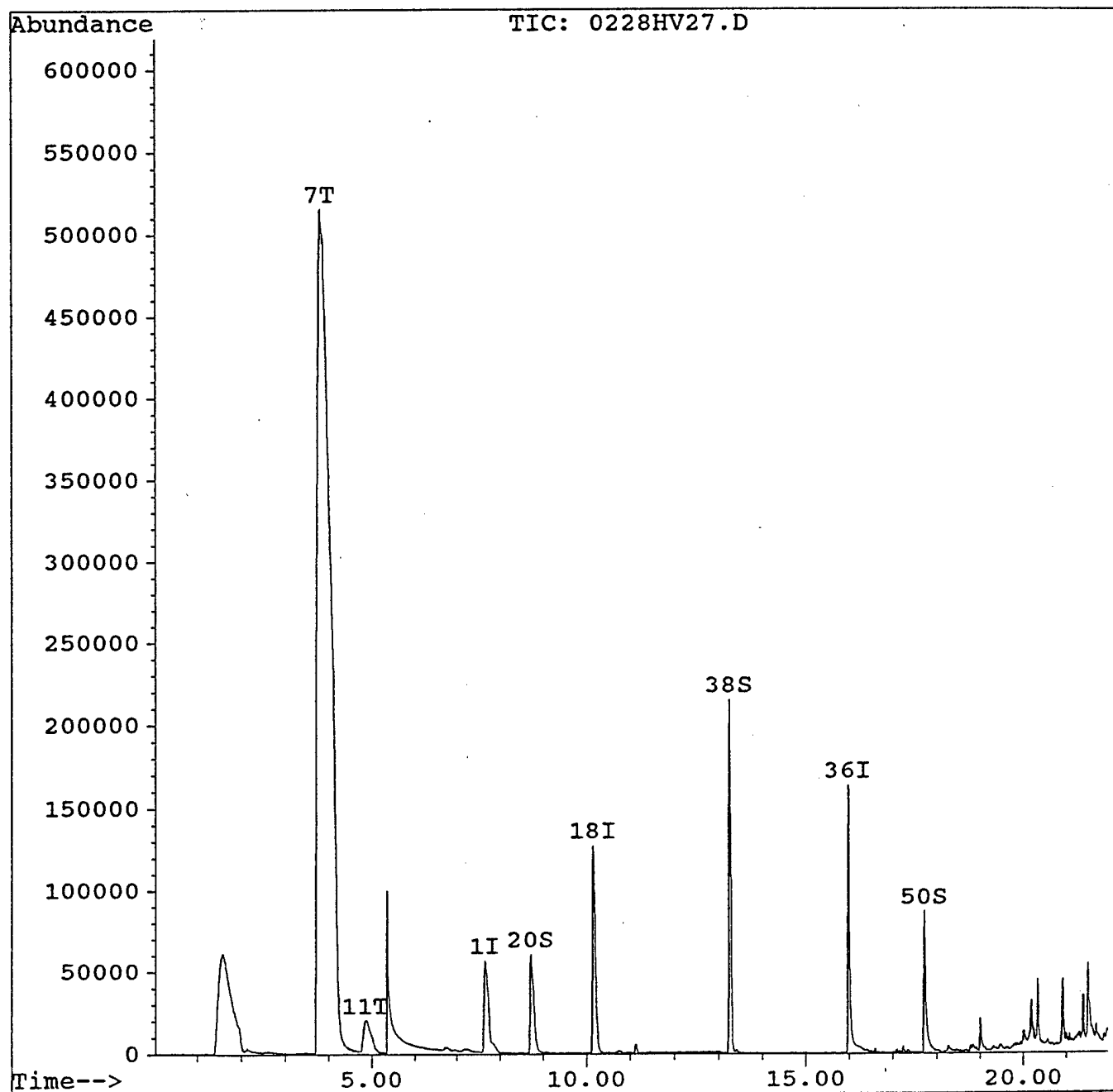
Quant Time: Mar 2 8:57 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV27.D

Acq Time : 1 Mar 94 1:00 am

Operator: HJV

Sample : 9402010557

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:57 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(%)
1) Bromochloromethane	7.66	130	70797	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.16	114	239868	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.99	117	164314	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.72	65	136773	62.41	ug/l	124
38) Toluene-d8	13.26	98	247158	54.79	ug/l	109
50) Bromofluorobenzene	17.72	95	79622	43.84	ug/l	87
Target Compounds						Qval
7) Acetone	3.82	43	7064888	1652.01	ug/l m	
11) Methylene chloride	4.84	84	43938	16.41	ug/l m	

(#) = qualifier out of range (m) = manual integration

0228HV27.D 8240.M

Wed Mar 02 08:58:12 1994

GC/MS

Page

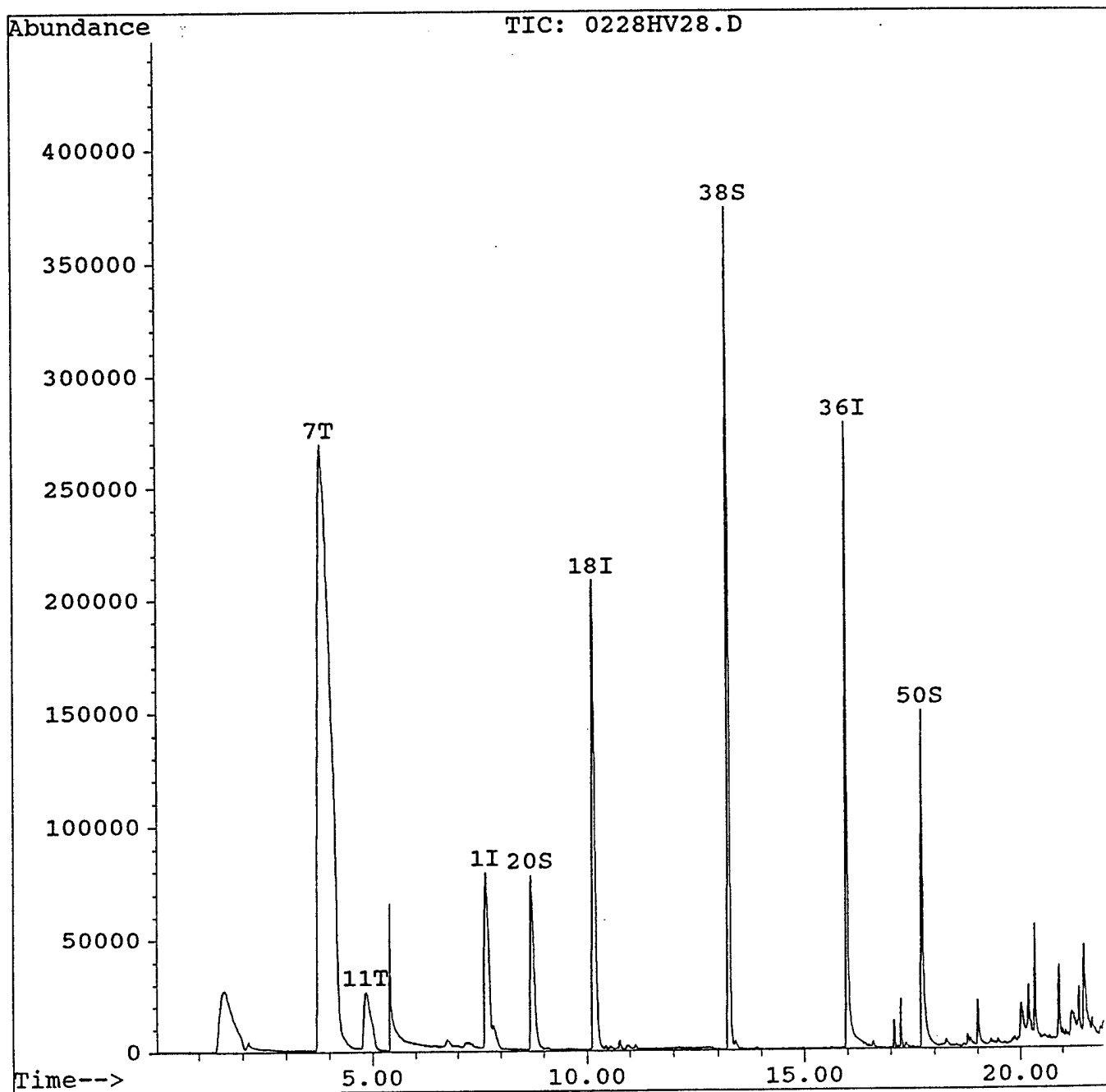


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV28.D  
 Acq Time : 1 Mar 94 1:33 am  
 Sample : 9402010558  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S  
 Quant Time: Mar 2 8:59 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\022894\0228HV28.D

Acq Time : 1 Mar 94 1:33 am

Sample : 9402010558

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

Quant Time: Mar 2 8:59 1994

Operator: HJV

Inst : GC/MS

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	Q	Ion	Response	Conc	Units	Dev
1) Bromochloromethane	7.66	130		98576	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114		406327	50.00	ug/l	0
36) Chlorobenzene-d5	15.98	117		268870	50.00	ug/l	0
System Monitoring Compounds							%Recov
20) 1,2-Dichloroethane-d4	8.72	65		198825	53.56	ug/l	107
38) Toluene-d8	13.26	98		403038	54.60	ug/l	109
50) Bromofluorobenzene	17.72	95		122894	41.35	ug/l	82
Target Compounds							Q a
7) Acetone	3.83	43		3624147	608.63	ug/l m	
11) Methylene chloride	4.84	84		66323	17.79	ug/l	

(#) = qualifier out of range (m) = manual integration

0228HV28.D 8240.M

Wed Mar 02 09:00:25 1994

GC/MS

Page

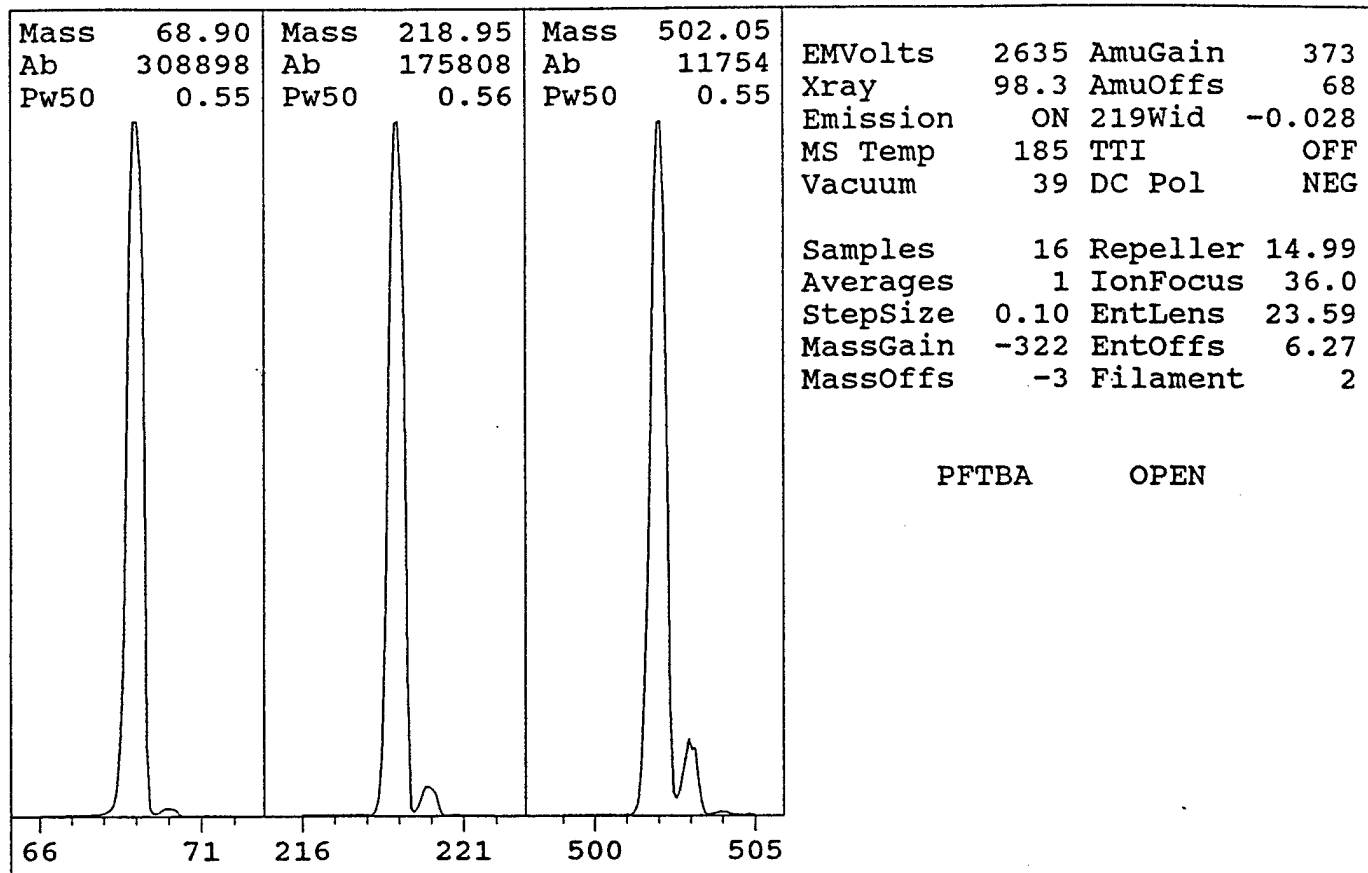


# HP5971 Standard Spectra AutoTune

Instrument: GC/MS

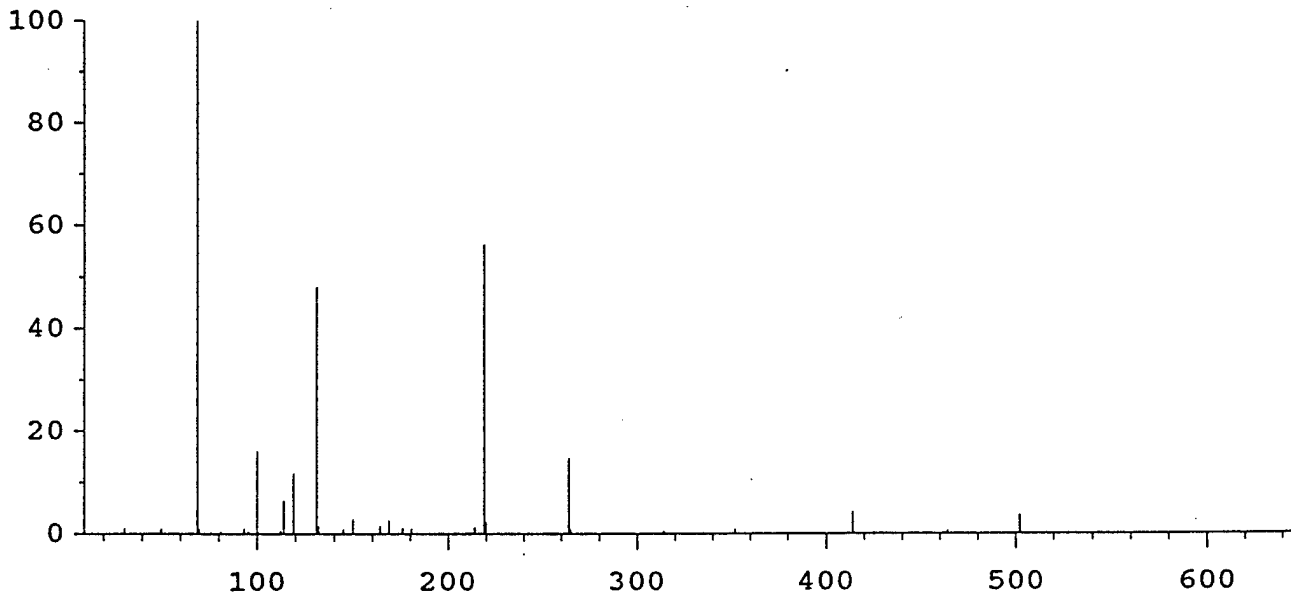
Tue Mar 01 08:09:52 1994

C:\HPCHEM\1\5971\ATUNE.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10

88 peaks Base: 68.95 Abundance: 270464



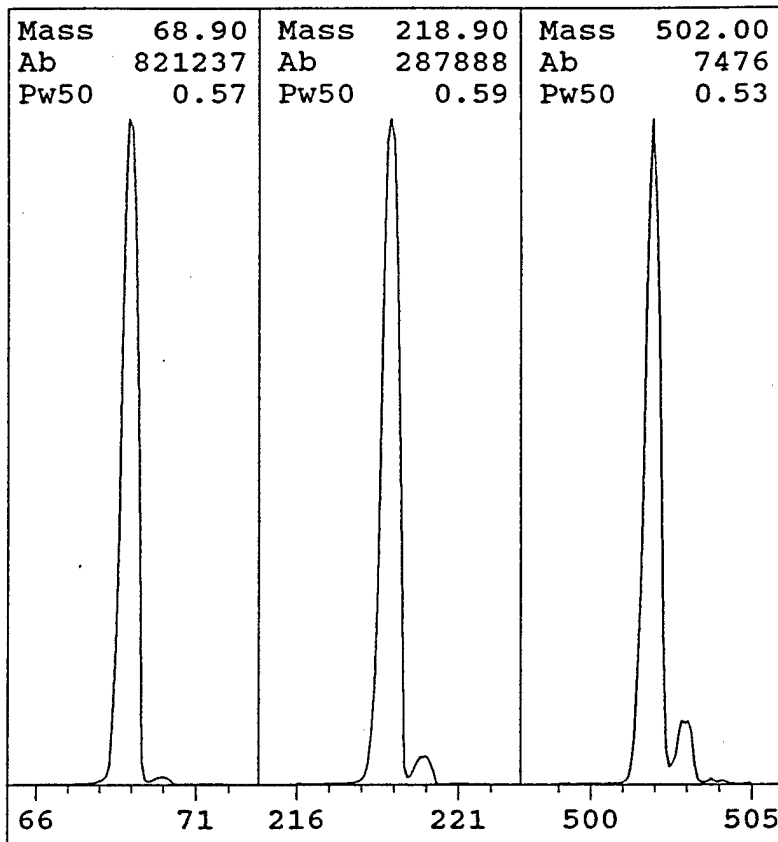
Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	270464	100.00	69.95	3049	1.13
218.90	152256	56.29	219.90	6506	4.27
502.00	10242	3.79	503.00	995	9.71



# HP5971 BFB Dynamic Target Tune

Tue Mar 01 08:18:30 1994

C:\HPCHEM\1\5971\BFB.U

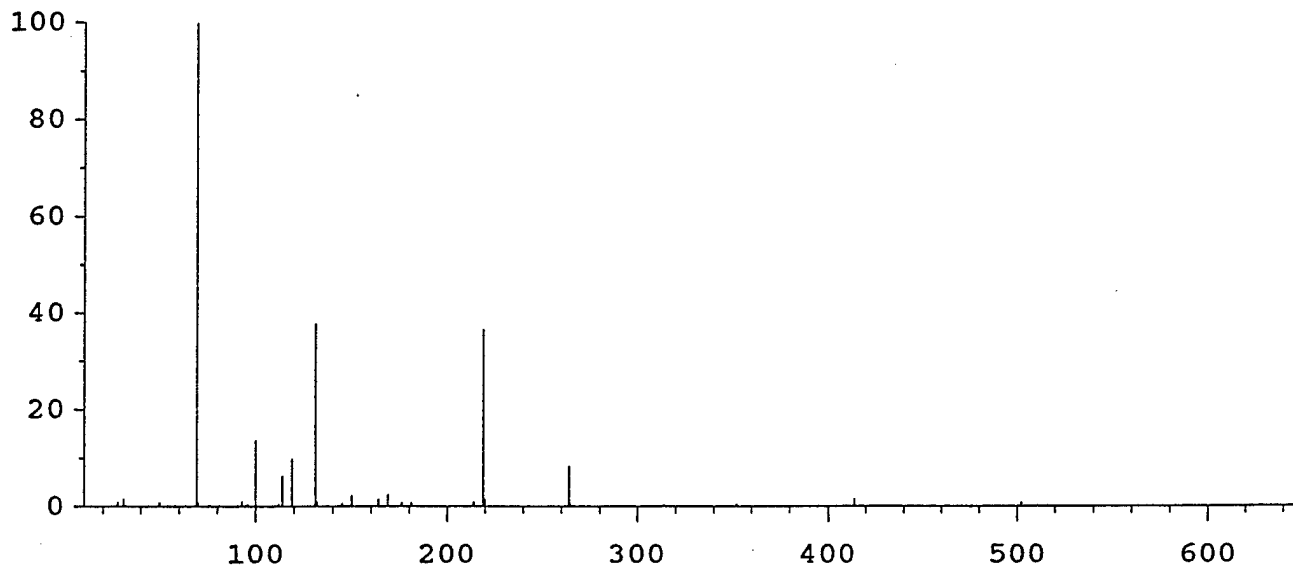


EMVolts 2682 AmuGain 376  
 Xray 98.3 AmuOffs 72  
 Emission ON 219Wid 0.024  
 MS Temp 184 TTI OFF  
 Vacuum 39 DC Pol NEG

Samples 16 Repeller 18.78  
 Averages 1 IonFocus 35.0  
 StepSize 0.10 EntLens 0.00  
 MassGain -327 EntOffs VAR  
 MassOffs -4 Filament 2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
 108 peaks Base: 69.00 Abundance: 690496



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	690496	100.00	69.90	7643	1.11
218.85	252736	36.60	219.85	11002	4.35
501.95	6188	0.90	503.05	600	9.70

TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	14.8	18.1	15.6	16.3
TARGET ABUND(%):	100.0	35.0	30.0	0.8
ACTUAL TUNE ABUND(%):	100.0	37.9	36.6	0.9



BFB

Data File : C:\HPCHEM\1\DATA\022994.D

Acq Time : 1 Mar 94 8:22 am

Sample : BFB TUNE EVALUATION

Misc : 1uL INJECTION (50ng)

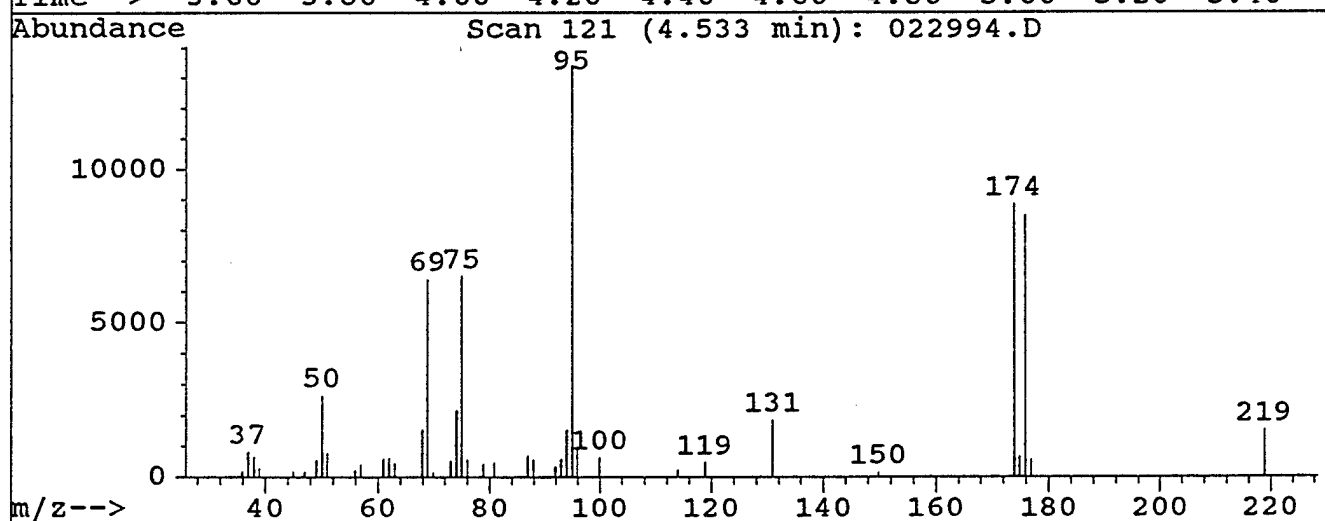
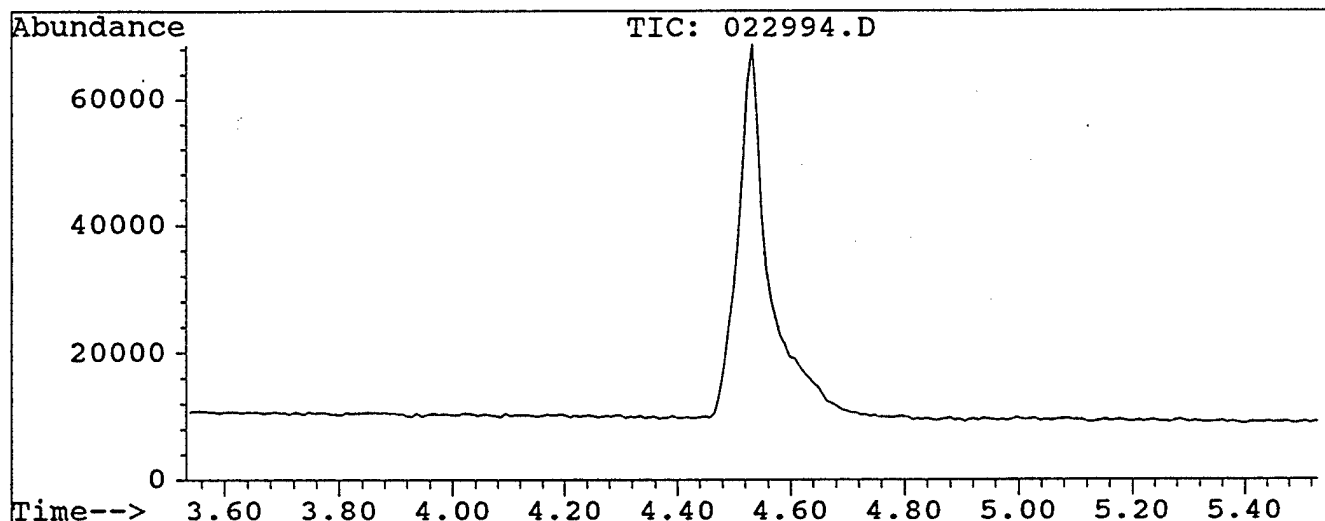
Operator: HJV

Inst : GC/MS

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\BFB624.M

Title :



Peak Apex is scan: 121

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.7	2641	PASS
75	95	30	60	48.5	6506	PASS
95	95	100	100	100.0	13409	PASS
96	95	5	9	6.8	912	PASS
173	174	0	2	0.0	0	PASS
174	95	50	100	66.2	8874	PASS
175	174	5	9	7.2	641	PASS
176	174	95	101	95.9	8514	PASS
177	176	5	9	6.7	571	PASS



## SEQUENCE.LOG

Simulate Run Sequence Tue Mar 01 09:05:42 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0301VOL.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\030194\

Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
ES	1) Sample	1	0301HJV1	8240	BLANK FOR VO ANALYS
	2) Sample	1	0301HJV2	8240	SPCC 100PPB
	3) Sample	1	0301HJV3	8240	CCC 100PPB
	4) Sample	1	0301HJV4	8240	9402010547 8
	5) Sample	1	0301HJV5	8240	9402010548 7
	6) Sample	1	0301HJV6	8240	9402010549
	7) Sample	1	0301HJV7	8240	9402010559
	8) Sample	1	0301HJV8	8240	9402010560
	9) Sample	1	0301HJV9	8240	9402010561
	10) Sample	1	0301HV10	8240	9402010562
	11) Sample	1	0301HV11	8240	9402010563
	12) Sample	1	0301HV12	8240	9402010515 TCLP VOL

Bytes Needed: 600000 Space on drive C: 33824768  
Sequence Verification Done!



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV1.D  
 Acq Time : 1 Mar 94 9:18 am  
 Sample : BLANK FOR VO ANALYSES  
 Misc : 5mL WATER + 10uL INTSTD/SURR.  
 Quant Time: Mar 2 9:02 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.65	130	95161	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.14	114	351172	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.97	117	283542	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.69	65	170068	53.01	ug/l	106.0
38) Toluene-d8	13.25	98	395097	50.75	ug/l	101.0
50) Bromofluorobenzene	17.72	95	125592	40.08	ug/l	80.0
Target Compounds						Qvalu
7) Acetone	3.85	43	255022	44.36	ug/l	# 6
11) Methylene chloride	4.87	84	65290	18.14	ug/l	9

(#) = qualifier out of range (m) = manual integration

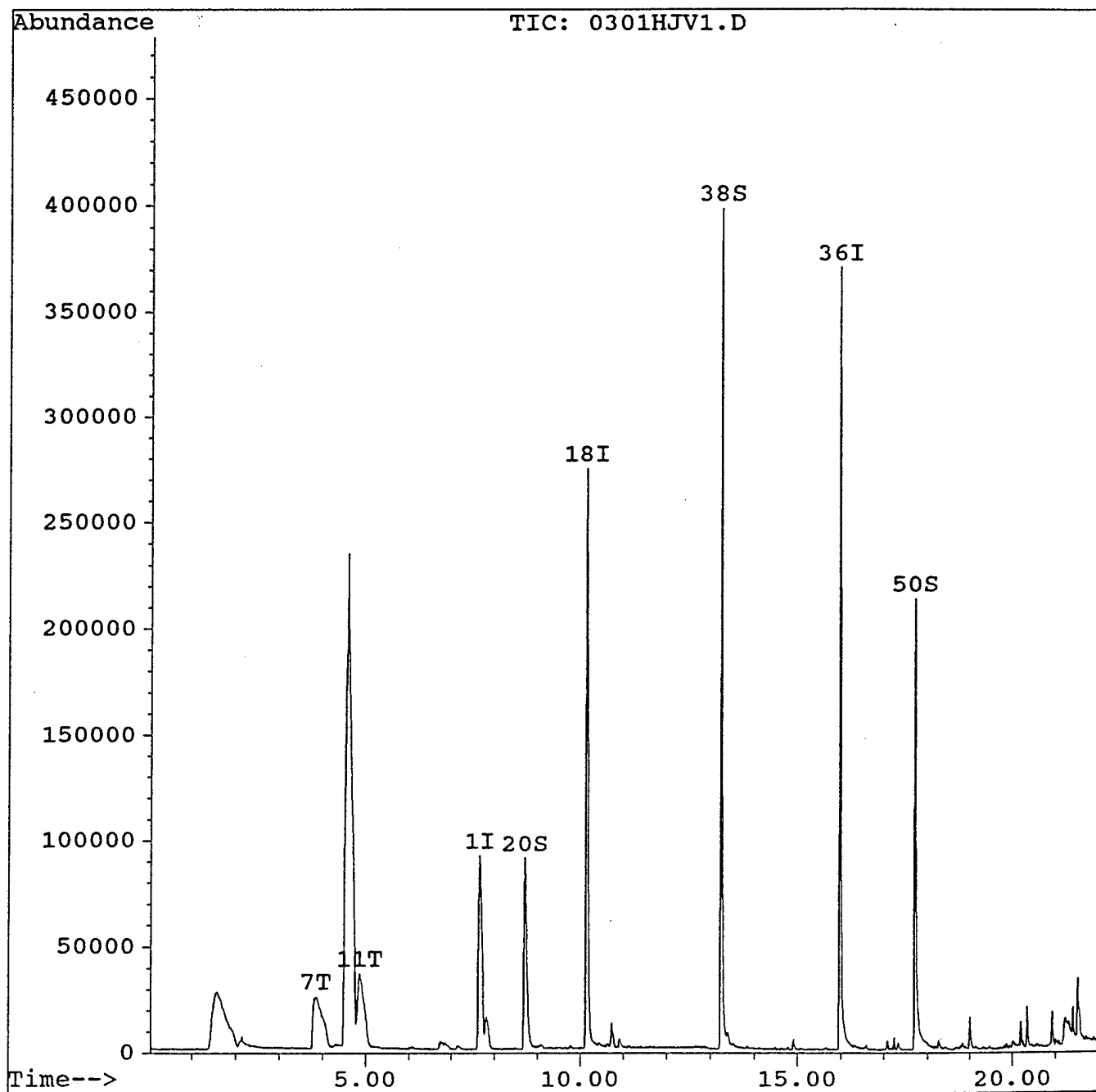


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV1.D  
Acq Time : 1 Mar 94 9:18 am  
Sample : BLANK FOR VO ANALYSES  
Misc : 5mL WATER + 10uL INTSTD/SURR.  
Quant Time: Mar 2 9:02 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





## Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV2.D

Acq Time : 1 Mar 94 9:49 am

Operator: HJV

Sample : SPCC 100PPB

Inst : GC/MS

Misc : 5mL WATER +2.5uL SPCC + 10uL INTSTD/SURR Multiplr: 1.00

Quant Time: Mar 1 14:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.66	130	85452	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.14	114	335493	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.96	117	280230	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.70	65	157163	51.27	ug/l	102.0
38) Toluene-d8	13.24	98	381891	49.64	ug/l	99.0
50) Bromofluorobenzene	17.71	95	150342	48.54	ug/l	97.0
Target Compounds						Qval
2) Chloromethane	1.88	50	132246	106.87	ug/l m	0
11) Methylene chloride	4.87	84	75685	23.42	ug/l	0
13) 1,1-Dichloroethane	6.14	63	451823	113.95	ug/l m	0
16) Chloroform	7.82	83	60798	11.58	ug/l	0
34) Bromoform	16.99	173	111140	70.28	ug/l m	0
43) Chlorobenzene	16.01	112	548129	106.10	ug/l	0
48) 1,1,2,2-Tetrachloroethane	17.67	83	156838	86.90	ug/l m	0

Calculation of response factors:

(1) Chloro methane  $\frac{132246 \times 50}{85452 \times 100} = 0.77 \checkmark$

(2) 1,1-Dichloro ethane  $\frac{451823 \times 50}{85452 \times 100} = 2.64 \checkmark$

(3) ~~Chloroform~~ Bromoform  $\frac{111140 \times 50}{335493 \times 100} = 0.17 \text{ out}$

(4) Chloro benzene  $\frac{548129 \times 50}{280230 \times 100} = 0.97 \checkmark$

(5) 1,1,2,2-Tetra chloro ethane  $\frac{156838 \times 50}{280230 \times 100} = 0.29 \checkmark$

(#)=qualifier out of range (m)=manual integration

0301HJV2.D 8240.M

Tue Mar 01 14:04:45 1994

GC/MS

Page 1



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV2.D

Acq Time : 1 Mar 94 9:49 am

Operator: HJV

Sample : SPCC 100PPB

Inst : GC/MS

Misc : 5mL WATER +2.5uL SPCC + 10uL INTSTD/SURR Multiplr: 1.00

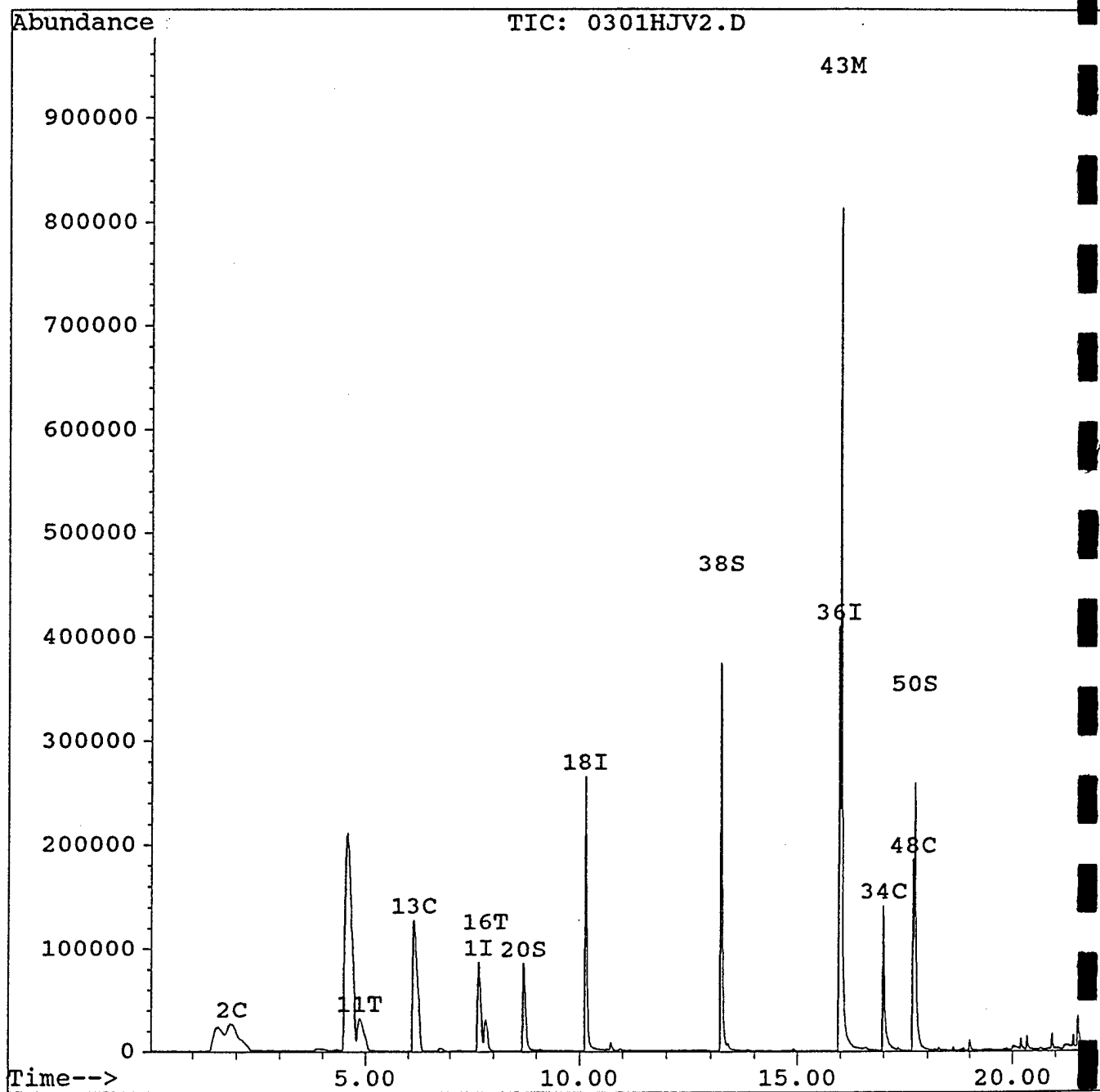
Quant Time: Mar 1 14:04 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV3.D

Acq Time : 1 Mar 94 10:20 am

Sample : CCC 100PPB

Misc : 5mL WATER +2.5uL CCC + 10uL INTSTD/SURR.

Quant Time: Mar 1 14:08 1994

Operator: HJV

Inst : GC/MS

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(N
1) Bromochloromethane	7.65	130	93593	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.14	114	376322	50.00	ug/l	0.
36) Chlorobenzene-d5	15.97	117	305499	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.70	65	169317	49.25	ug/l	98.
38) Toluene-d8	13.24	98	425220	50.70	ug/l	101.
50) Bromofluorobenzene	17.71	95	139571	41.34	ug/l	82.
Target Compounds						Quali
3) Vinyl chloride	2.08	62	234784	105.50	ug/l m	8
8) 1,1-Dichloroethene	4.16	61	405789	100.19	ug/l m	2
11) Methylene chloride	4.87	84	81708	23.08	ug/l	9
16) Chloroform	7.78	83	555532	96.59	ug/l m	9
24) 1,2-Dichloropropane	10.66	63	192703	102.51	ug/l m	7
39) Toluene	13.39	92	525955	86.61	ug/l m	9
44) Ethylbenzene	16.40	106	250836	91.86	ug/l m	8
48) 1,1,2,2-Tetrachloroethane	17.68	83	17813	9.05	ug/l m	9

Calculation of response factors :-

Calc. of % RPD

(1) Vinyl chloride  $\frac{234784 \times 50}{93593 \times 100} = 1.254$   $\frac{1.189 - 1.254 \times 100}{1.189} = 5.$

(2) 1,1-Dichloro ethene  $\frac{405789 \times 50}{93593 \times 100} = 2.167$   $\frac{2.164 - 2.167 \times 100}{2.164} = 0.$

(3) Chloroform  $\frac{555532 \times 50}{93593 \times 100} = 2.967$   $\frac{3.073 - 2.967 \times 100}{3.073} = 3.$

(4) 1,2-Dichloropropane  $\frac{192703 \times 50}{376322 \times 100} = 0.256$   $\frac{0.250 - 0.256 \times 100}{0.250} = 2.$

(5) Toluene  $\frac{525955 \times 50}{305499 \times 100} = 0.861$   $\frac{0.994 - 0.861 \times 100}{0.994} = 13.35$

(6) Ethyl Benzene  $\frac{250836 \times 50}{305499 \times 100} = 0.411$   $\frac{0.447 - 0.411 \times 100}{0.447} = 8.05$

CCC's ALL CLEARED

(#) = qualifier out of range (m) = manual integration

0301HJV3.D 8240.M

Tue Mar 01 14:08:46 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV3.D

Acq Time : 1 Mar 94 10:20 am

Operator: HJV

Sample : CCC 100PPB

Inst : GC/MS

Misc : 5mL WATER +2.5uL CCC + 10uL INTSTD/SURR. Multiplr: 1.00

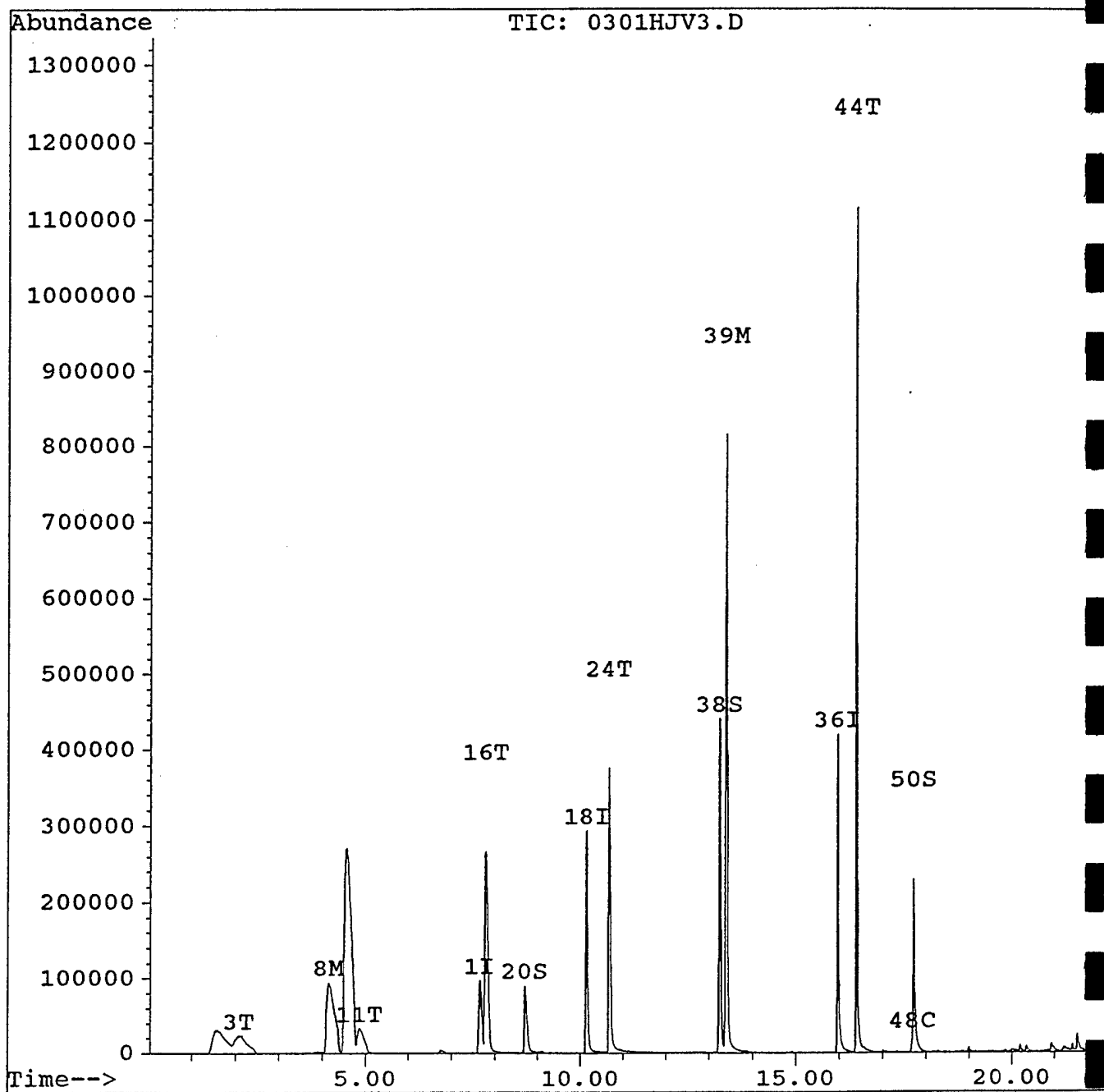
Quant Time: Mar 1 14:08 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV7.D

Acq Time : 1 Mar 94 12:30 pm

Operator: HJV

Sample : 9402010559

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Multiplr: 1.00

Quant Time: Mar 2 9:10 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(%)
1) Bromochloromethane	7.68	130	59573	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.16	114	234931	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	150856	50.00	ug/l	0.
System Monitoring Compounds						%Recovery
20) 1,2-Dichloroethane-d4	8.72	65	116795	54.42	ug/l	108.
38) Toluene-d8	13.26	98	230480	55.65	ug/l	111.
50) Bromofluorobenzene	17.73	95	79901	47.92	ug/l	95.
Target Compounds						Qual
7) Acetone	3.90	43	63327	17.60	ug/l m	1
11) Methylene chloride	4.87	84	42663	18.93	ug/l m	

(#) = qualifier out of range (m) = manual integration

0301HJV7.D 8240.M

Wed Mar 02 09:11:05 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV7.D

Acq Time : 1 Mar 94 12:30 pm

Sample : 9402010559

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Quant Time: Mar 2 9:10 1994

Operator: HJV

Inst : GC/MS

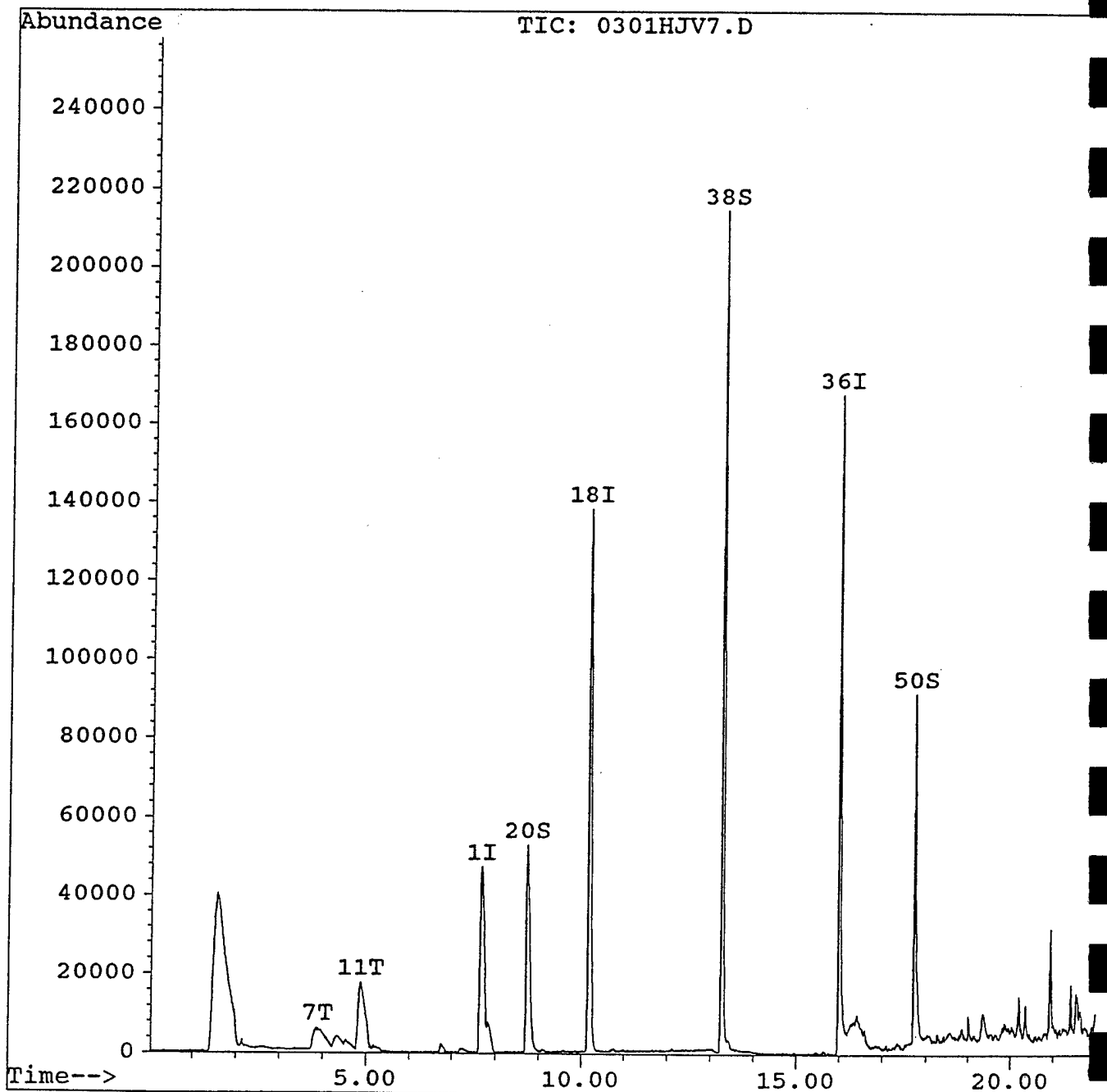
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV8.D

Acq Time : 1 Mar 94 1:03 pm

Operator: HJV

Sample : 9402010560

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Multiplr: 1.00

Quant Time: Mar 2 9:12 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M)
1) Bromochloromethane	7.66	130	106110	50.00	ug/l	0.0
18) 1,4-Difluorobenzene	10.16	114	418767	50.00	ug/l	0.0
36) Chlorobenzene-d5	15.98	117	314884	50.00	ug/l	0.0
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	217166	56.76	ug/l	113.5
38) Toluene-d8	13.27	98	442729	51.21	ug/l	102.4
50) Bromofluorobenzene	17.73	95	144709	41.58	ug/l	83.3
Target Compounds						Qualu
7) Acetone	3.87	43	236106	36.84	ug/l m	8
11) Methylene chloride	4.86	84	73146	18.23	ug/l	9

(#) = qualifier out of range (m) = manual integration

0301HJV8.D 8240.M

Wed Mar 02 09:12:50 1994

GC/MS

Page



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV8.D

Acq Time : 1 Mar 94 1:03 pm

Operator: HJV

Sample : 9402010560

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

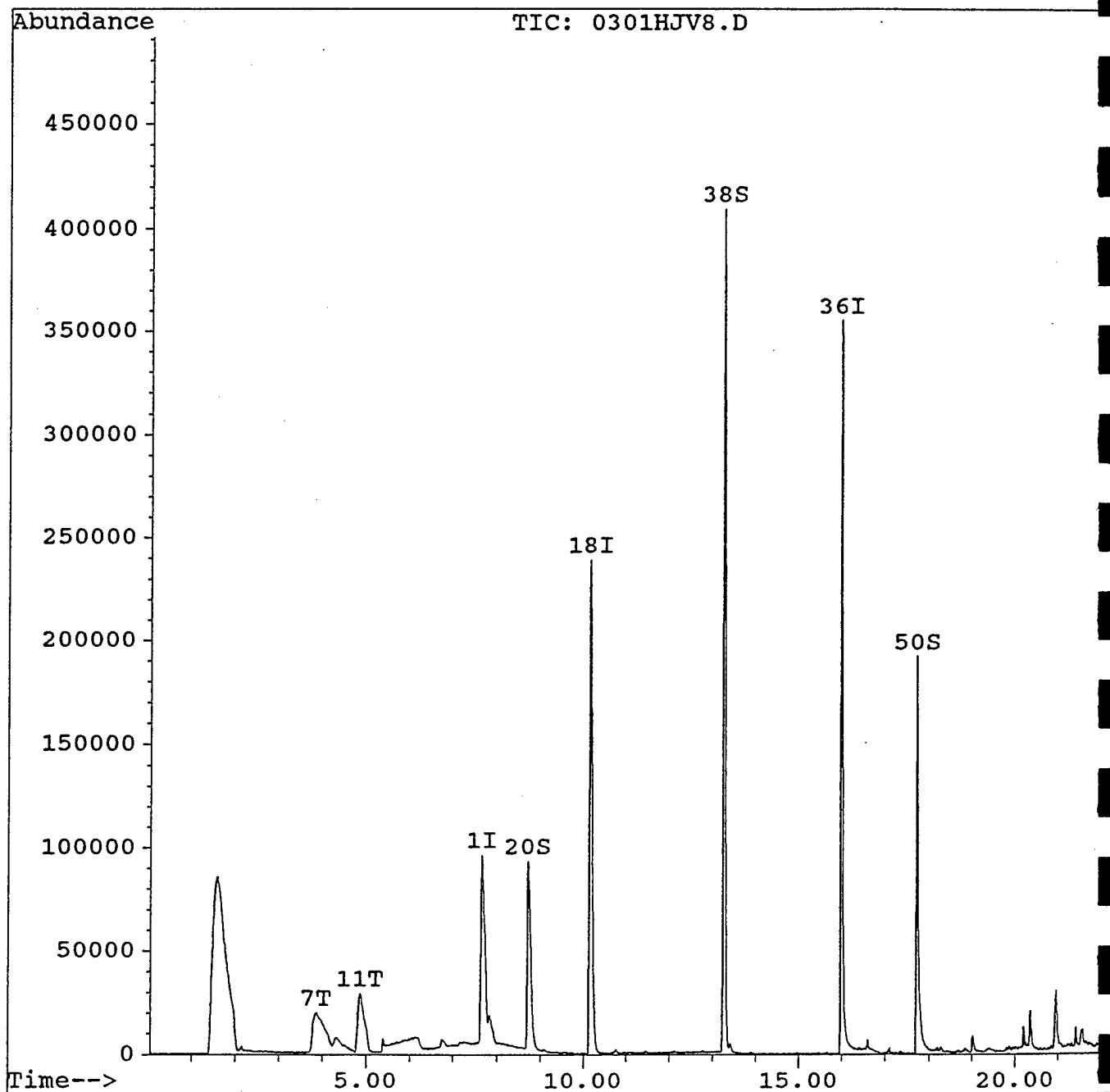
Quant Time: Mar 2 9:12 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV9.D  
 Acq Time : 1 Mar 94 1:37 pm Operator: HJV  
 Sample : 9402010561 Inst : GC/MS  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00  
 Quant Time: Mar 2 9:14 1994

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.67	130	66650	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.16	114	235403	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	151729	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	125334	58.28	ug/l	116.
38) Toluene-d8	13.26	98	229058	54.99	ug/l	109.
50) Bromofluorobenzene	17.73	95	65427	39.01	ug/l	78.
Target Compounds						Qual
7) Acetone	3.84	43	5046306	1253.42	ug/l	
11) Methylene chloride	4.86	84	48734	19.33	ug/l m	

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HJV9.D

Acq Time : 1 Mar 94 1:37 pm

Sample : 9402010561

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Quant Time: Mar 2 9:14 1994

Operator: HJV

Inst : GC/M

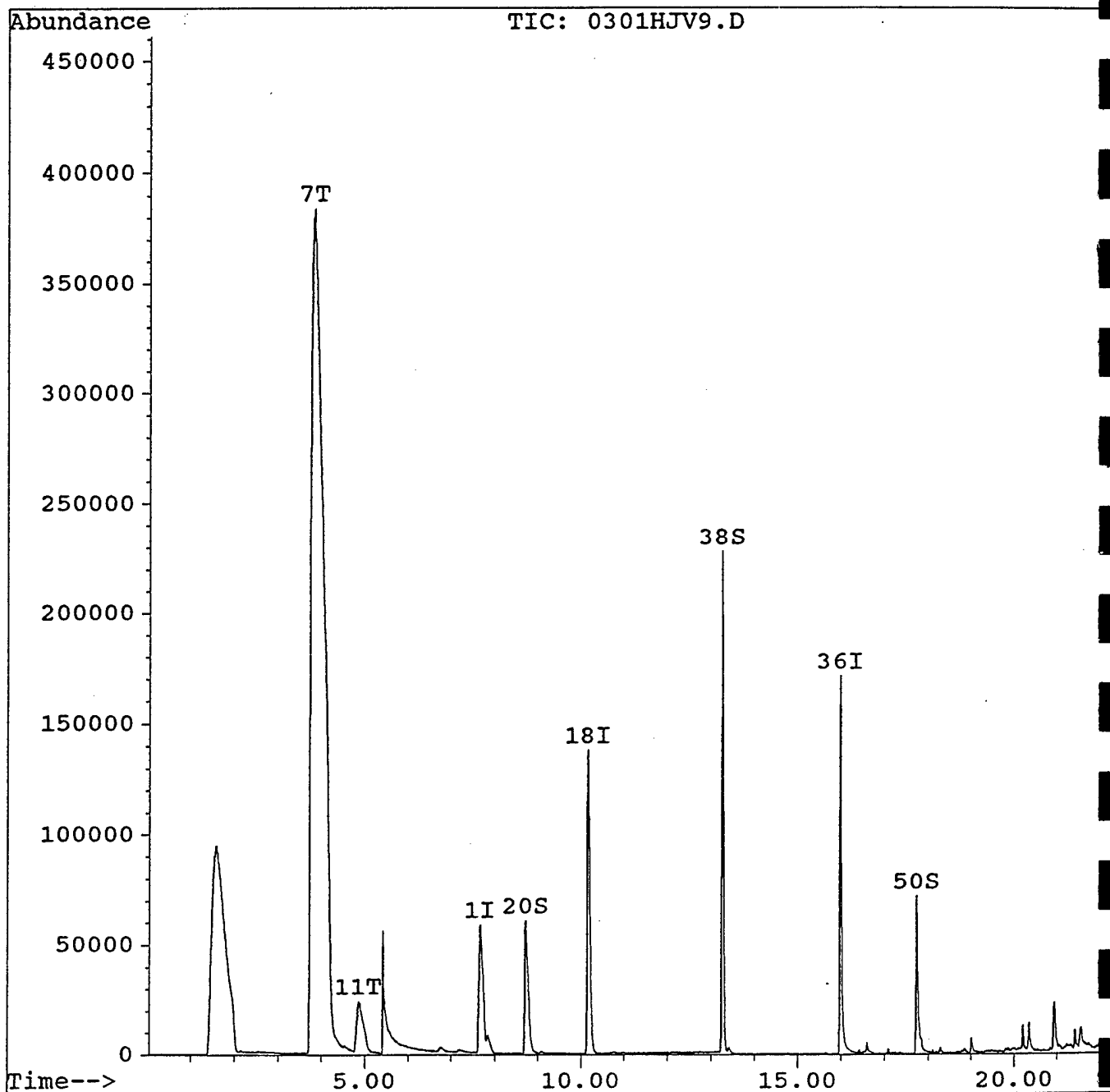
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV10.D  
 Acq Time : 1 Mar 94 2:11 pm  
 Sample : 9402010562  
 Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S  
 Quant Time: Mar 2 9:16 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(
1) Bromochloromethane	7.68	130	101031	50.00	ug/l	0
18) 1,4-Difluorobenzene	10.15	114	395944	50.00	ug/l	0
36) Chlorobenzene-d5	15.99	117	254542	50.00	ug/l	0
System Monitoring Compounds						%Recov
20) 1,2-Dichloroethane-d4	8.71	65	180701	49.95	ug/l	99
38) Toluene-d8	13.26	98	385163	55.11	ug/l	110
50) Bromofluorobenzene	17.73	95	113536	40.36	ug/l	80
Target Compounds						Qval
7) Acetone	3.87	43	256850	42.09	ug/l m	
9) Carbon disulfide	4.35	76	63644	7.76	ug/l m	
11) Methylene chloride	4.84	84	69810	18.27	ug/l m	

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV10.D

Acq Time : 1 Mar 94 2:11 pm

Operator: HJV

Sample : 9402010562

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S Multiplr: 1.00

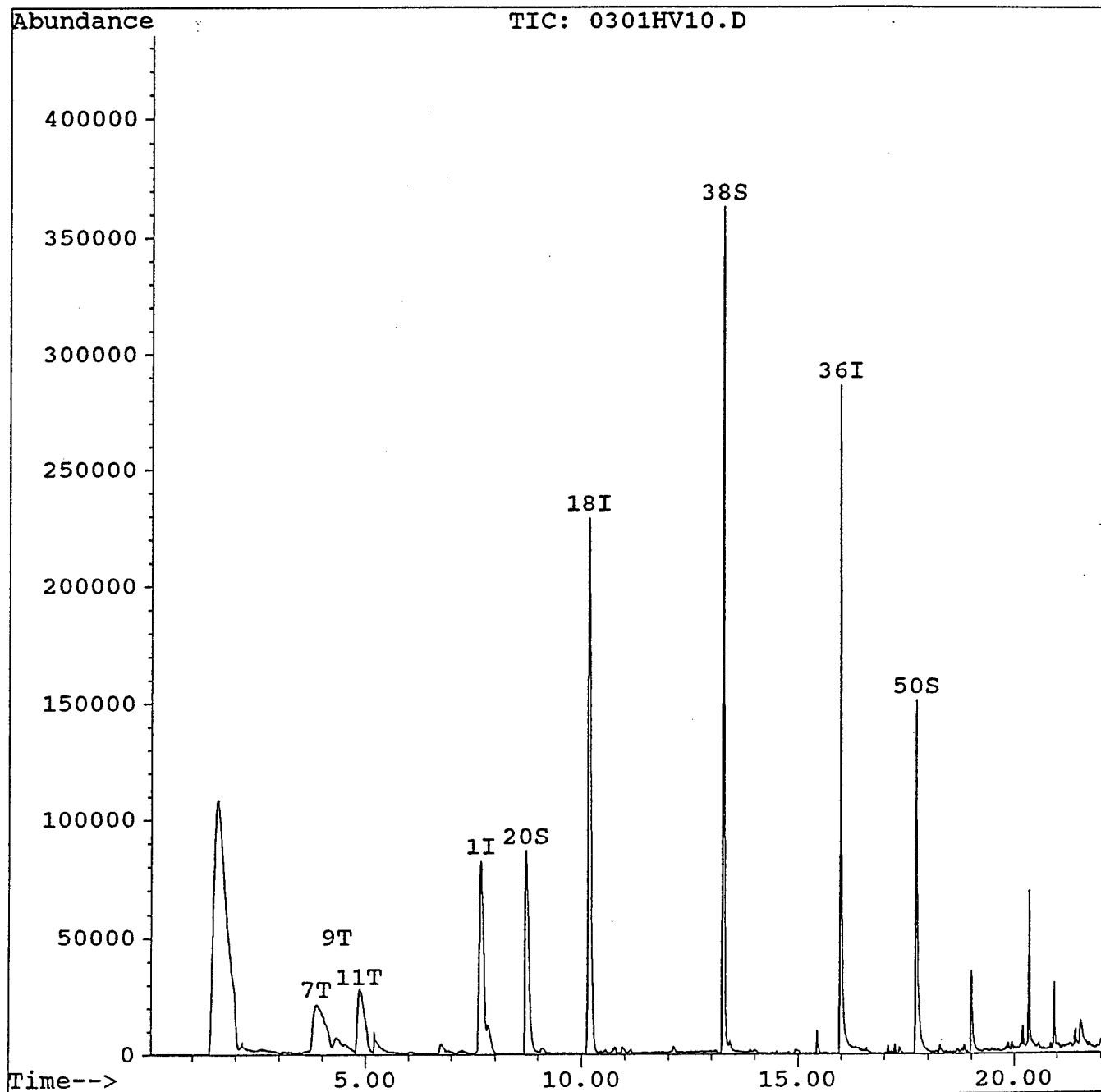
Quant Time: Mar 2 9:16 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV11.D

Acq Time : 1 Mar 94 2:45 pm

Operator: HJV

Sample : 9402010563

Inst : GC/MS

Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S

Multiplr: 1.00

Quant Time: Mar 2 9:18 1994

Method : C:\HPCHEM\1\METHODS\8240.M

Title : Volatiles

Last Update : Tue Nov 30 16:13:40 1993

Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.66	130	96426	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	343906	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	240891	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	182725	58.16	ug/l	116.
38) Toluene-d8	13.26	98	331719	50.16	ug/l	100.
50) Bromofluorobenzene	17.72	95	115654	43.44	ug/l	86.8
Target Compounds						Qvalue
7) Acetone	3.90	43	109324	18.77	ug/l m	5
11) Methylene chloride	4.87	84	66152	18.14	ug/l m	9

(#) = qualifier out of range (m) = manual integration

0301HV11.D 8240.M

Wed Mar 02 09:19:17 1994

GC/MS

Page 1

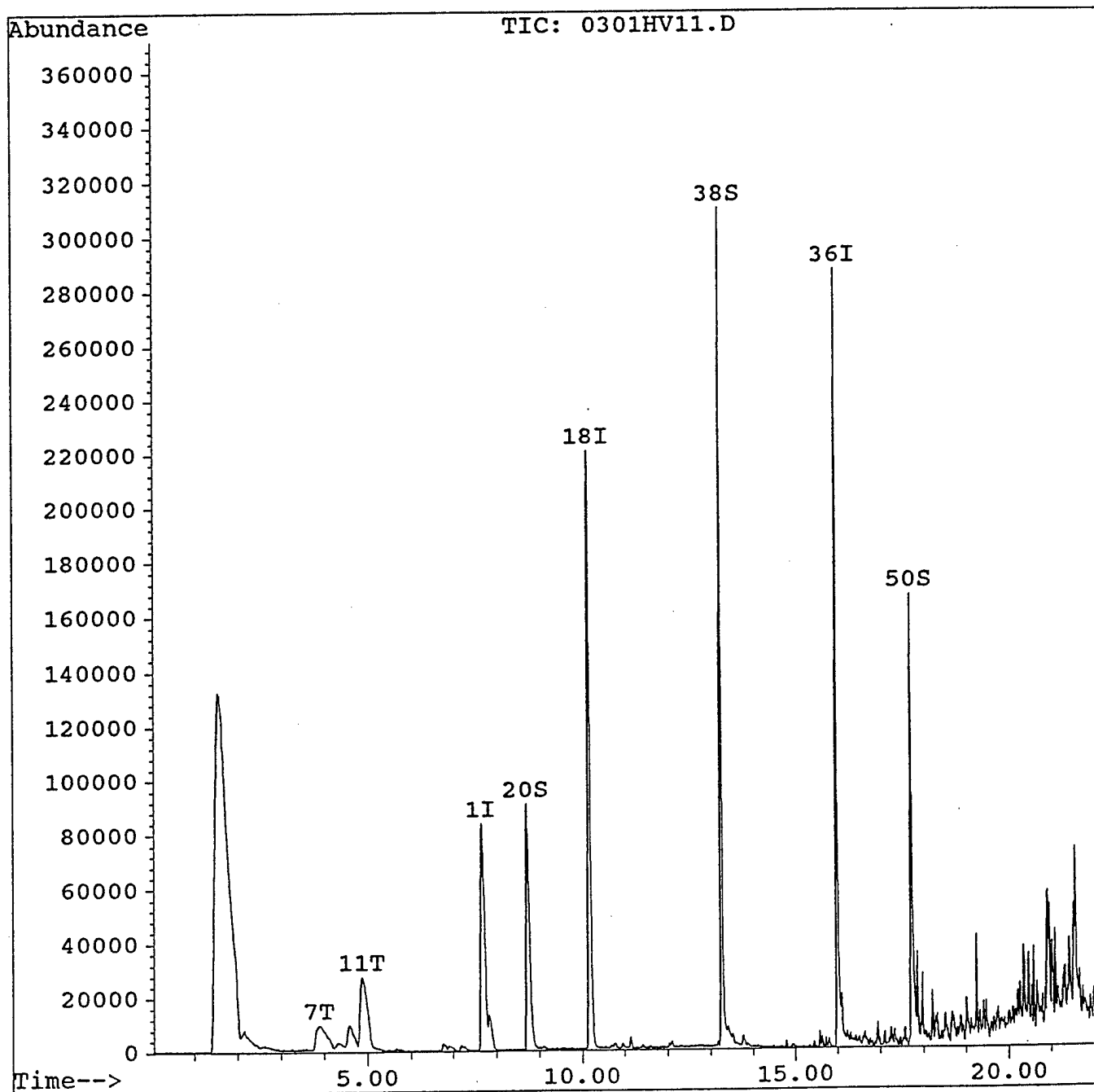


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV11.D  
Acq Time : 1 Mar 94 2:45 pm  
Sample : 9402010563  
Misc : 5g SAMPLE + 5mL WATER WITH 10uL INTSTD/S  
Quant Time: Mar 2 9:18 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0314942\0314HV1.D  
 Acq Time : 13 Mar 94 3:08 am  
 Sample : 9402010572 SEMI VOL.  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Apr 12 8:26 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	366757	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1305755	40.00	ng	0.09
40) Acenaphthene-d10	20.28	164	750763	40.00	ng	0.11
67) Phenanthrene-d10	24.91	188	1028163	40.00	ng	0.06
82) Chrysene-d12	33.30	240	197211	40.00	ng	0.17
92) Perylene-d12	38.48	264	80542	40.00	ng	0.42
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.12	112	274170	29.49	ng	73.72%
8) Phenol-d5	11.35	99	283461	23.09	ng	57.72%
23) Nitrobenzene-d5	12.71	82	366825	33.37	ng	83.42%
45) 2-Fluorobiphenyl	18.28	172	759784	27.92	ng	69.80%
66) 2,4,6-Tribromophenol	23.03	330	79909	28.81	ng	72.04%
85) Terphenyl-d14	30.07	244	348537	61.68	ng	154.20%
Target Compounds						Qvalue
91) Bis(2-ethylhexyl) phthalat	33.80	149	11541038	1624.81	ng	m 96

(#) = qualifier out of range (m) = manual integration

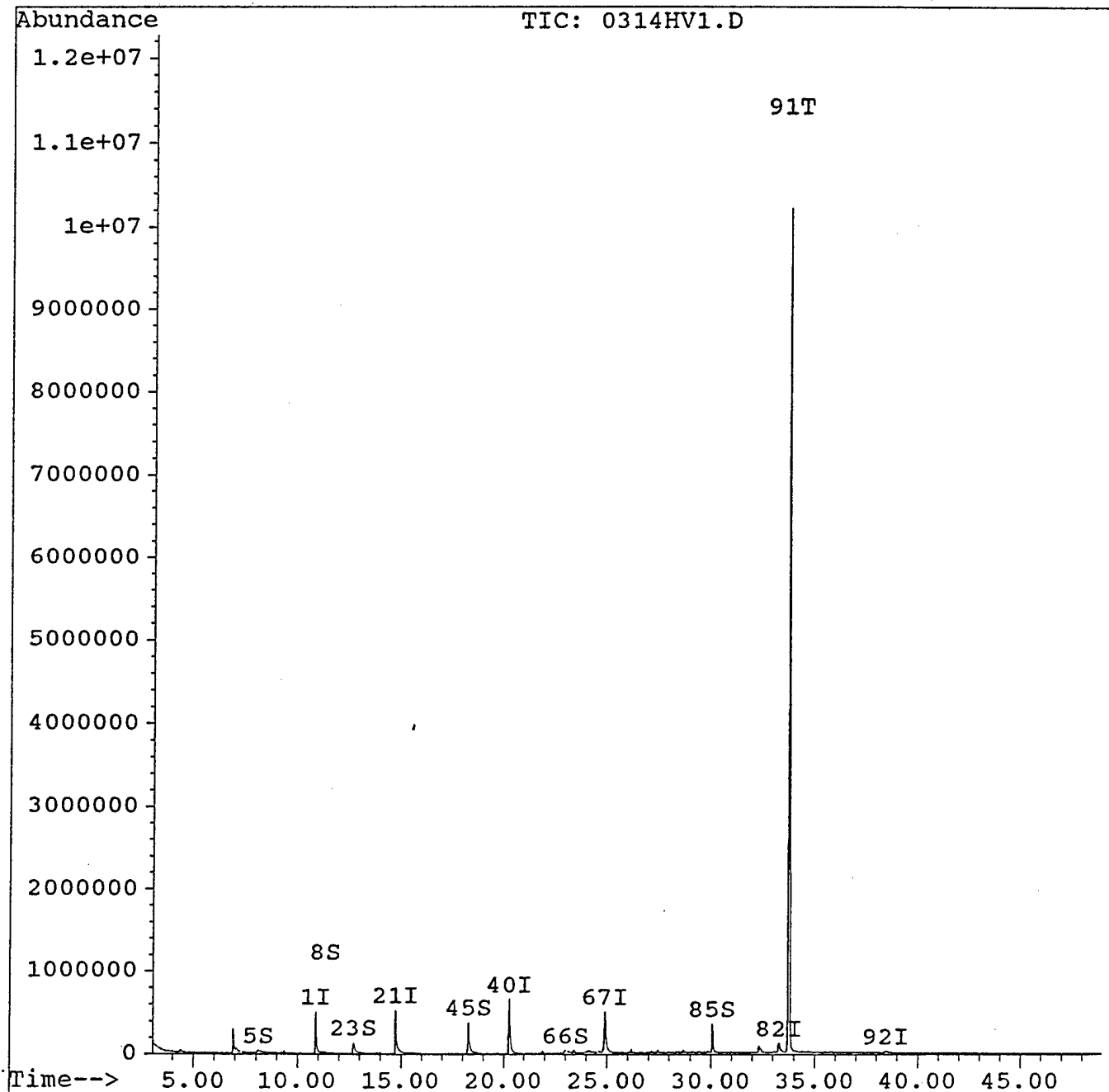


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0314942\0314HV1.D  
Acq Time : 13 Mar 94 3:08 am  
Sample : 9402010572 SEMI VOL.  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Apr 12 8:26 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV14.D  
 Acq Time : 1 Mar 94 4:32 pm  
 Sample : 9402010572  
 Misc : 5mL SAMPLE + 10uL INTSTD/SURR.  
 Quant Time: Mar 2 9:23 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) Bromochloromethane	7.66	130	90316	50.00	ug/l	0.
18) 1,4-Difluorobenzene	10.15	114	363553	50.00	ug/l	0.
36) Chlorobenzene-d5	15.98	117	295762	50.00	ug/l	0.
System Monitoring Compounds						%Recover
20) 1,2-Dichloroethane-d4	8.71	65	168152	50.63	ug/l	101.
38) Toluene-d8	13.26	98	407371	50.17	ug/l	100.
50) Bromofluorobenzene	17.73	95	138594	42.40	ug/l	84.
Target Compounds						Qval
7) Acetone	3.89	43	60692	11.12	ug/l m	
9) Carbon disulfide	4.35	76	105938	14.46	ug/l m	
11) Methylene chloride	4.84	84	766496	224.39	ug/l	
16) Chloroform	7.82	83	70766	12.75	ug/l	
26) Trichloroethene	10.73	130	19730	8.49	ug/l	
39) Toluene	13.41	92	30910	5.26	ug/l	

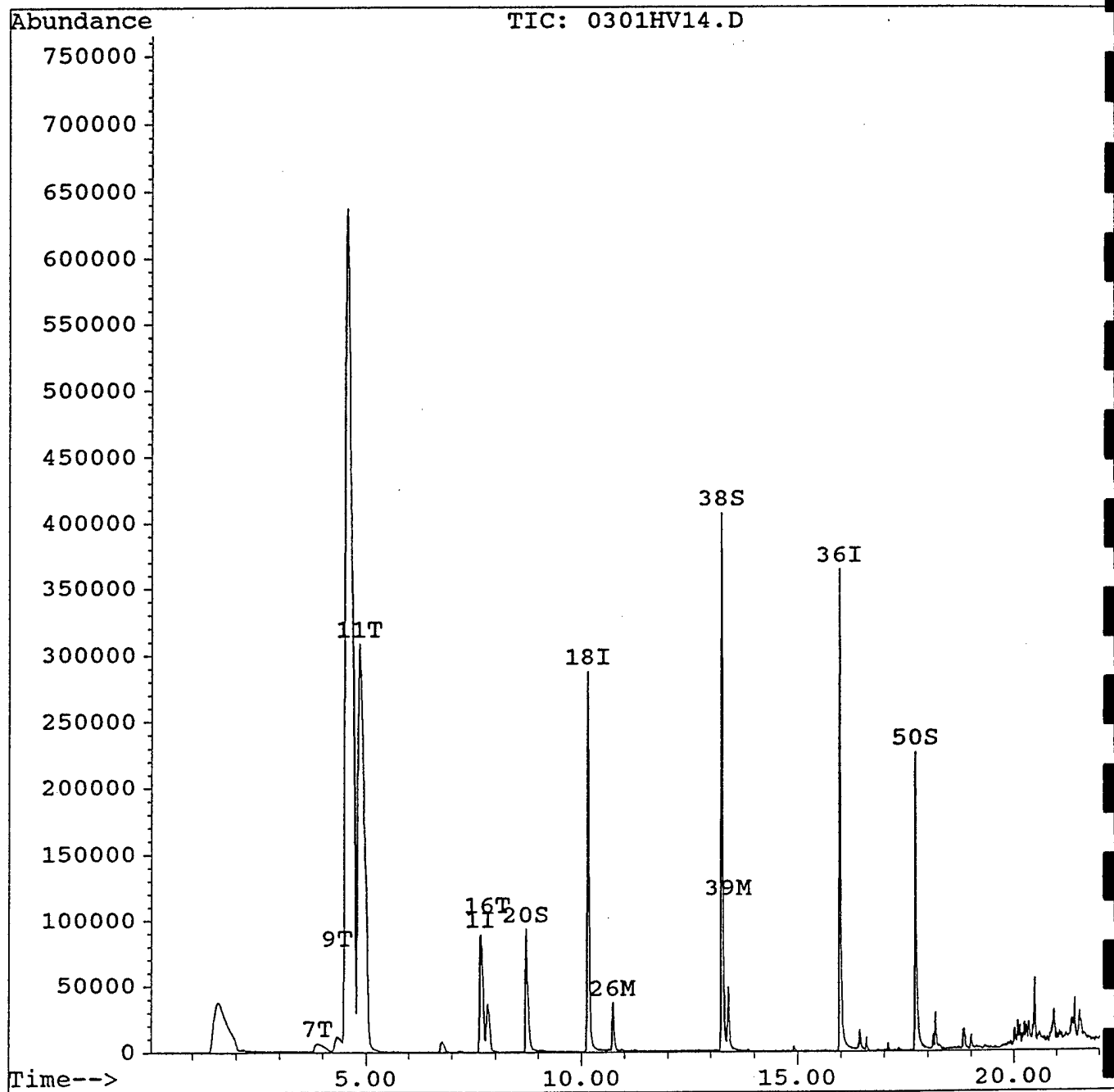


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030194\0301HV14.D  
Acq Time : 1 Mar 94 4:32 pm  
Sample : 9402010572  
Misc : 5mL SAMPLE + 10uL INTSTD/SURR.  
Quant Time: Mar 2 9:23 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





## Information from Data File:

File: C:\HPCHEM\1\DATA\030194\0301HV14.D  
Operator: HJV  
Date Acquired: 1 Mar 94 4:32 pm  
Method File: 8240  
Sample Name: 9402010572  
Misc Info: 5mL SAMPLE + 10uL INTSTD/SURR.  
Vial Number: 1

Search Libraries: C:\DATABASE\NBS54K.L

Minimum Quality: 50

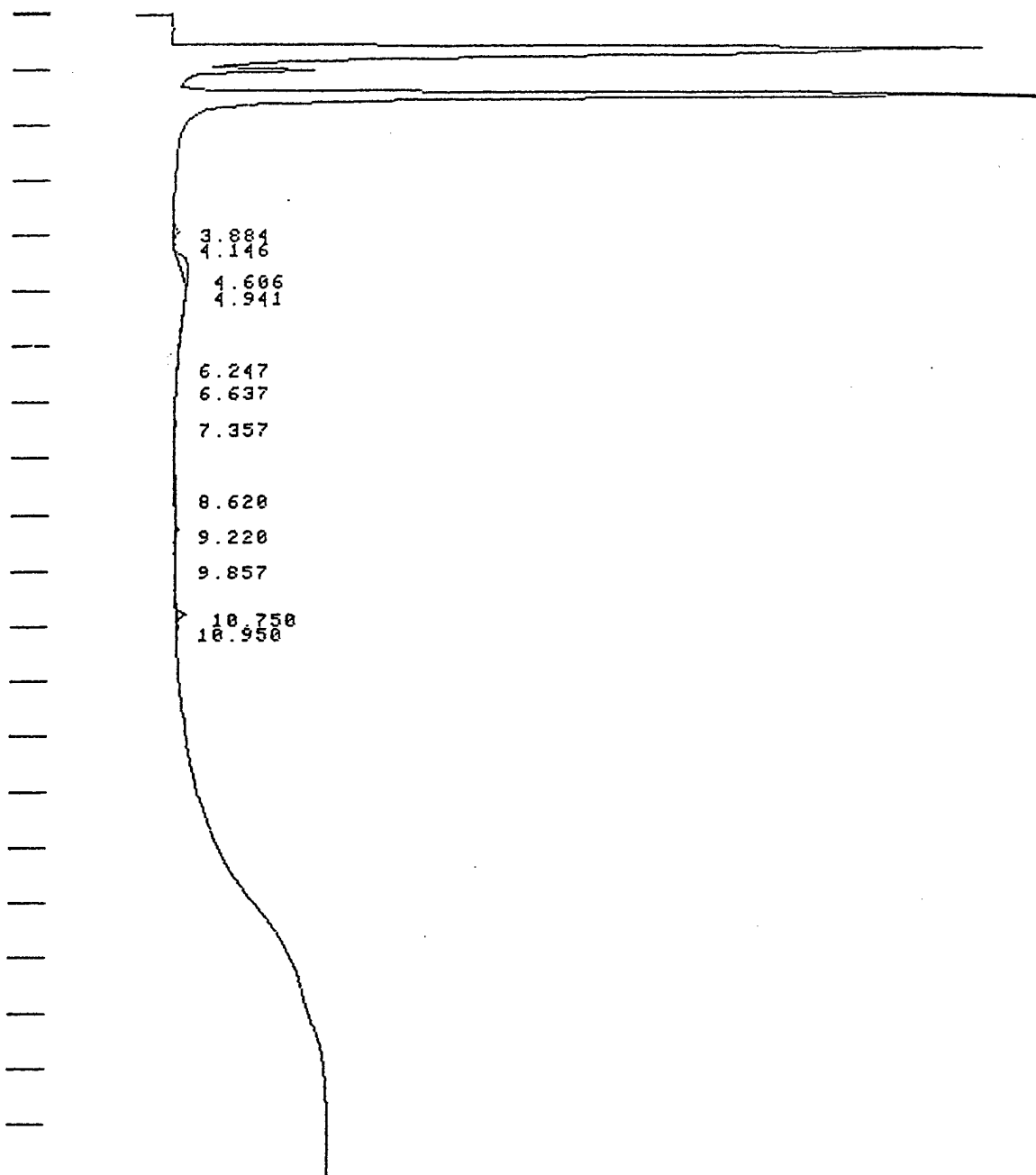
Unknown Spectrum: Apex

Integration Events: AutoIntegrate

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
1	1.59	5.34	C:\DATABASE\NBS54K.L No matches found			
2	4.56	45.14	C:\DATABASE\NBS54K.L Ethane, 1,1,2-trichloro-1,2,2-trif	16399	000076-13-1	83
			Ethane, 1,1,2,2-tetrachloro-1-fluo	15887	000354-14-3	50
			Methane, trichlorofluoro-	5515	000075-69-4	35
3	4.84	20.81	C:\DATABASE\NBS54K.L Methane, dichloro-	492	000075-09-2	91
4	7.66	3.17	C:\DATABASE\NBS54K.L Methane, bromochloro-	4239	000074-97-5	95
			Methane, dichloro-	492	000075-09-2	47
5	8.71	2.74	C:\DATABASE\NBS54K.L No matches found			
6	10.15	5.81	C:\DATABASE\NBS54K.L Benzene, 1,4-difluoro-	2556	000540-36-3	95
			Benzene, 1,2-difluoro-	2555	000367-11-3	91
			Benzene, 1,3-difluoro-	2557	000372-18-9	90
7	13.26	7.08	C:\DATABASE\NBS54K.L Mepivacaine (carbocaine)	28096	000096-88-8	38
			1H-Imidazole-2-methanol	1102	003724-26-3	28
8	15.98	6.06	C:\DATABASE\NBS54K.L 1H-Pyrazole, 3-methyl-	433	001453-58-3	7
9	17.73	3.84	C:\DATABASE\NBS54K.L Benzene, 1-bromo-2-fluoro-	13705	001072-85-1	94
			Benzene, 1-bromo-3-fluoro-	13704	001073-06-9	91
			Benzene, 1-bromo-4-fluoro-	13706	000460-00-4	91



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC105

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

8:35 3 MAR 94

SAMPLE: EXTR. BLANK

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

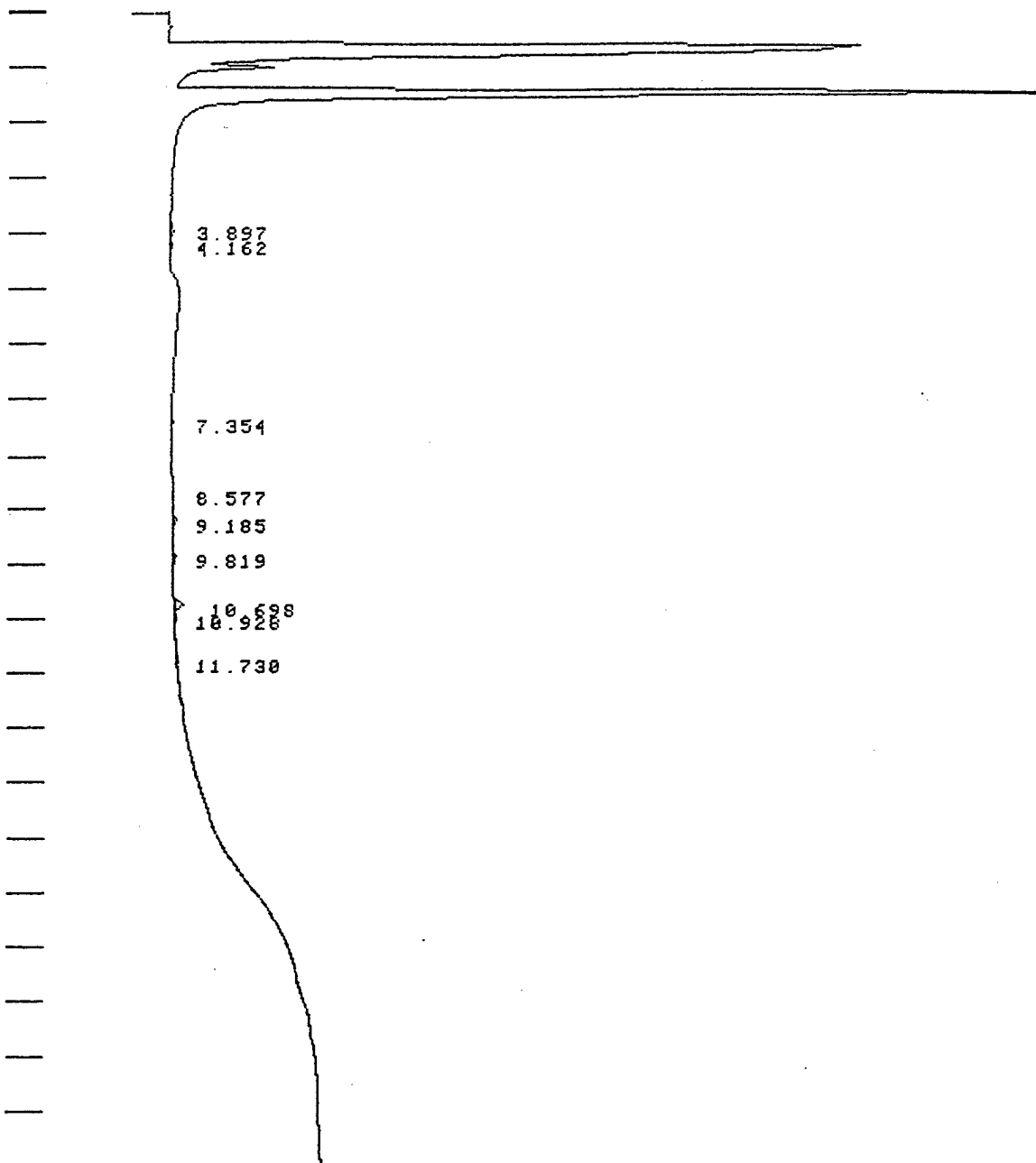
PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 3620



START SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC106

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

9:06 3 MAR 94

SAMPLE: 9402010531

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT:			1576		
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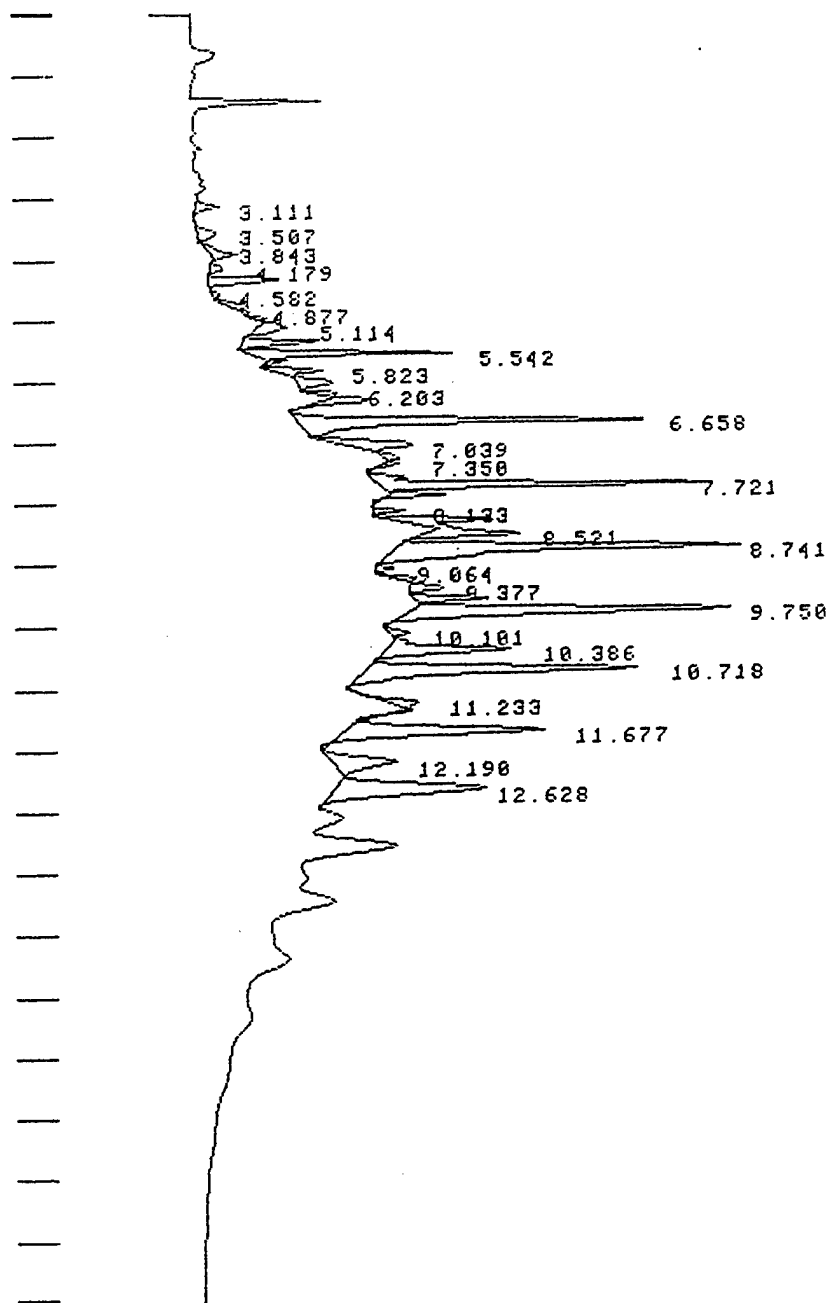
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC107

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

9:36 3 MAR 94

SAMPLE: 531 SPIKE

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 6150120

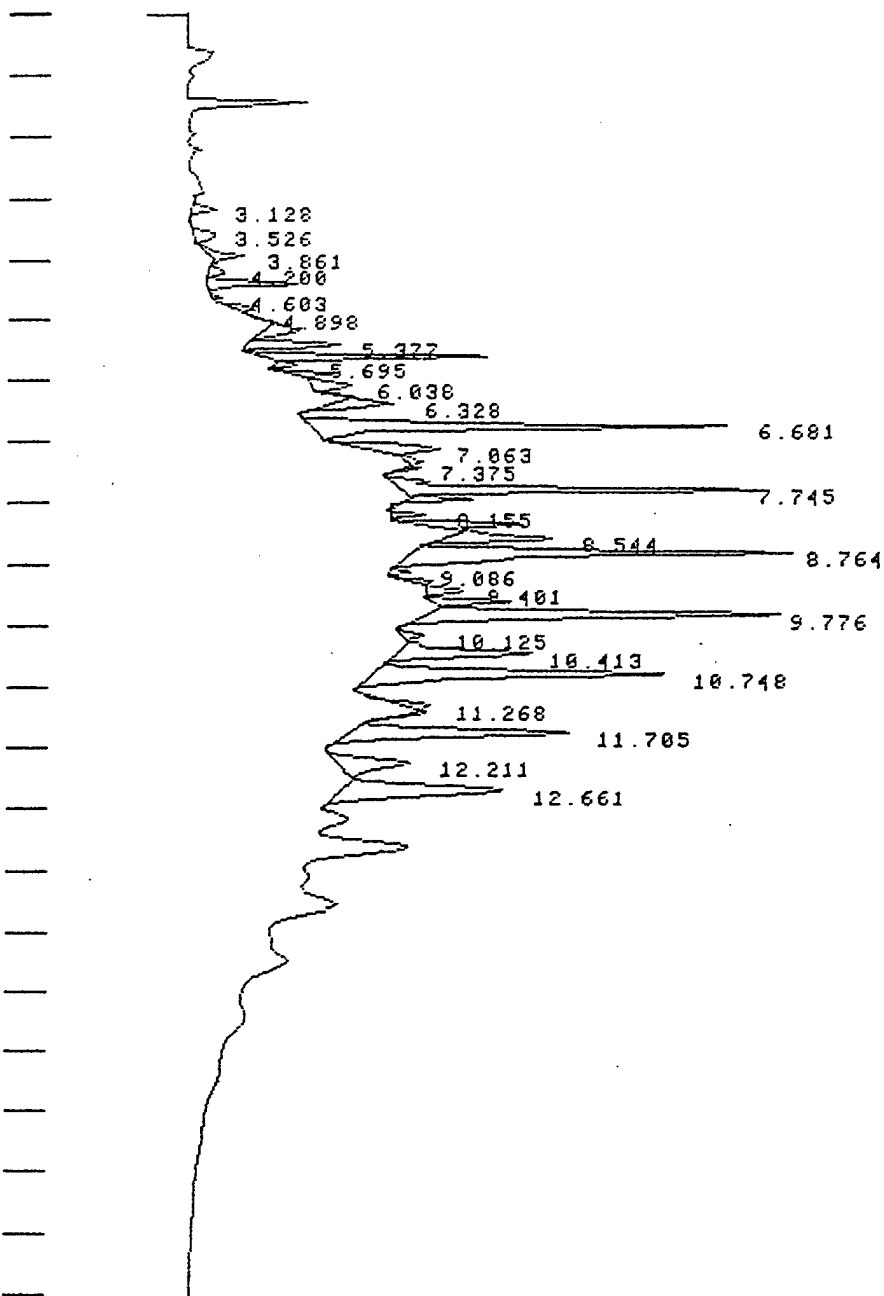
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC108

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

10:14 3 MAR 94

SAMPLE: SPK DUP

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000 0

TOTAL UNIDENT AREA/HT: 6818429

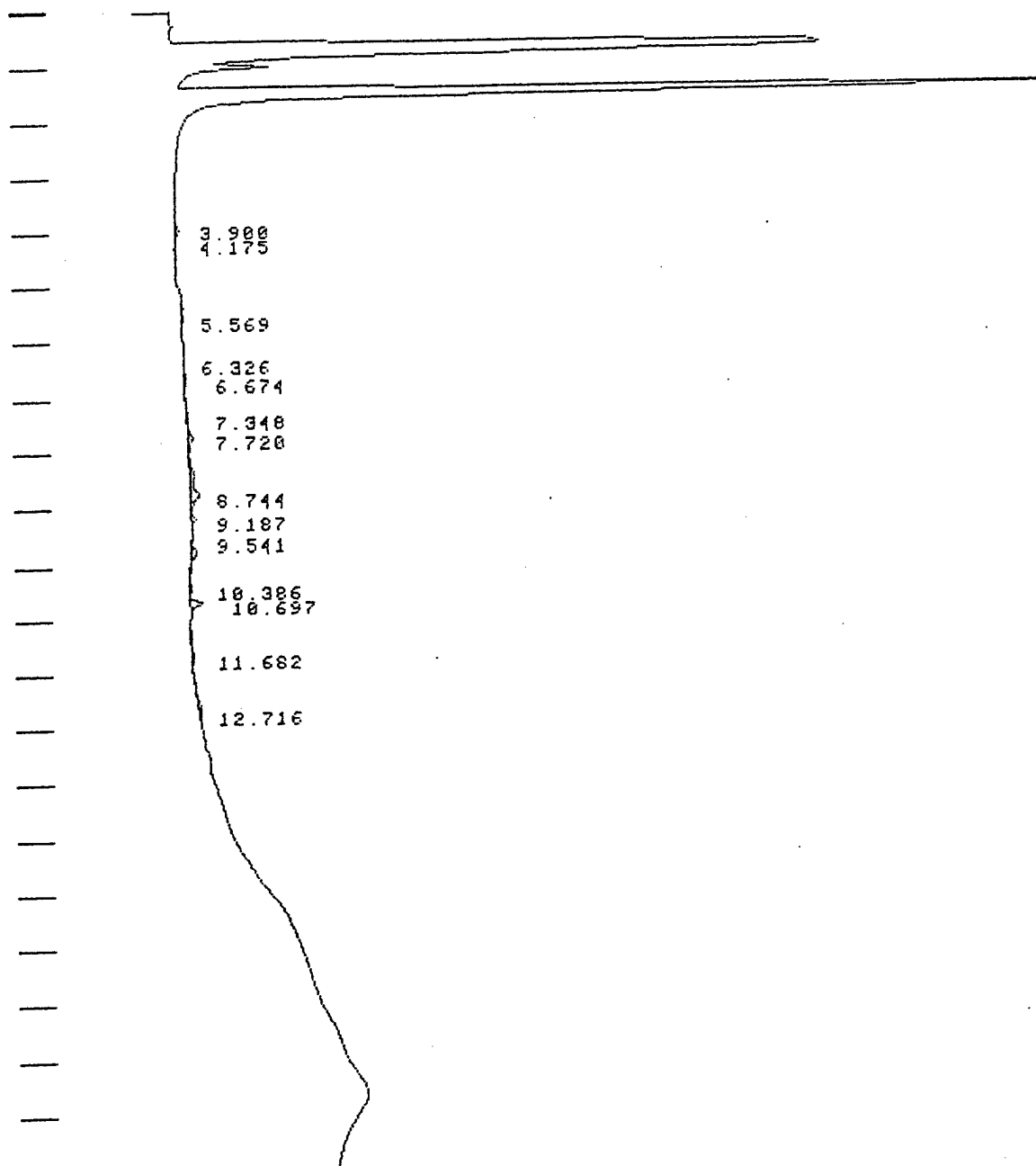
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC109

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

10:45 3 MAR 94

SAMPLE: 9402010532 METHOD: TPHC

CALCULATION: AX - ANALYS - OF

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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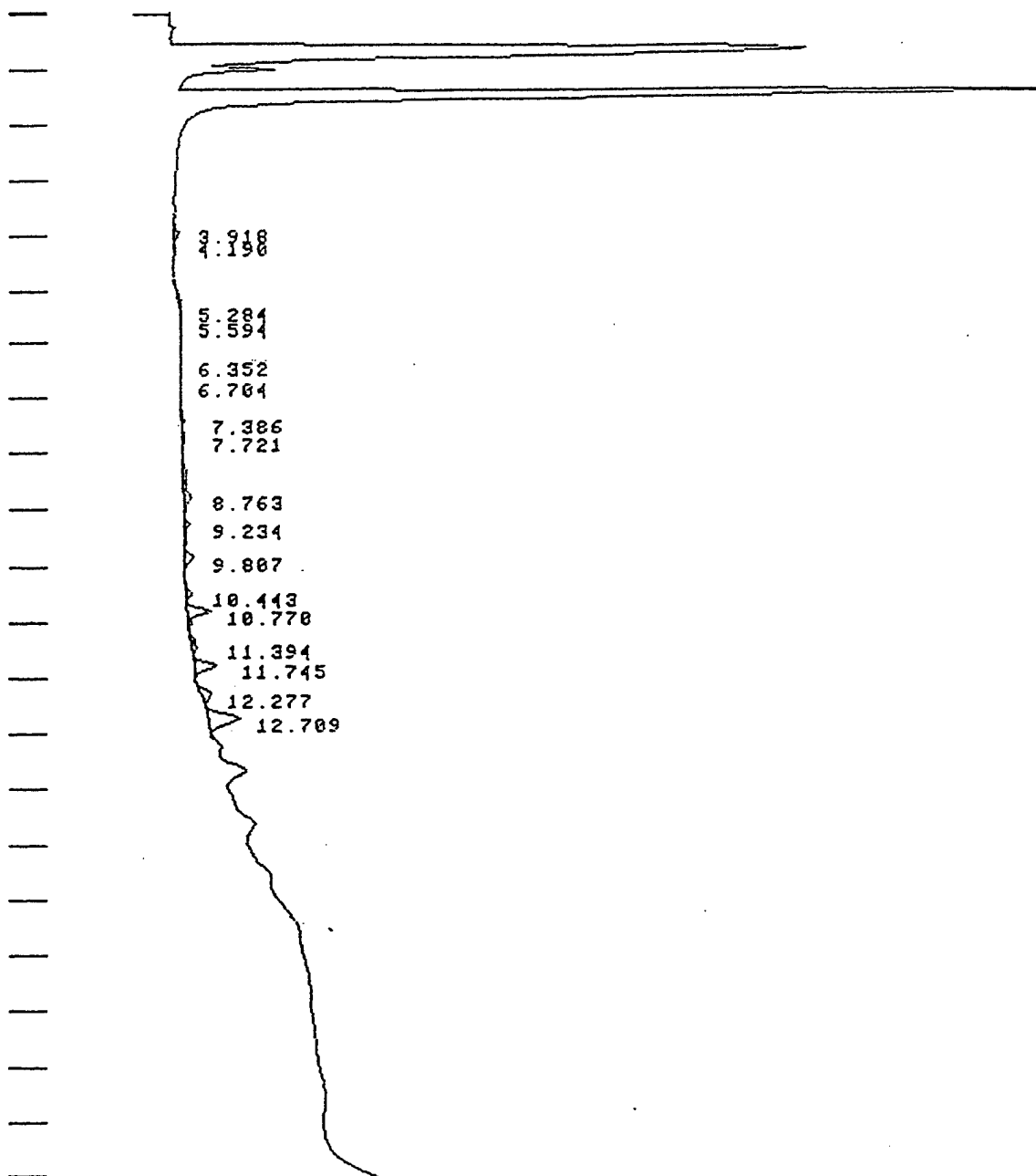
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 5694



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC110

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

11:28 3 MAR 94

SAMPLE: 9402010533

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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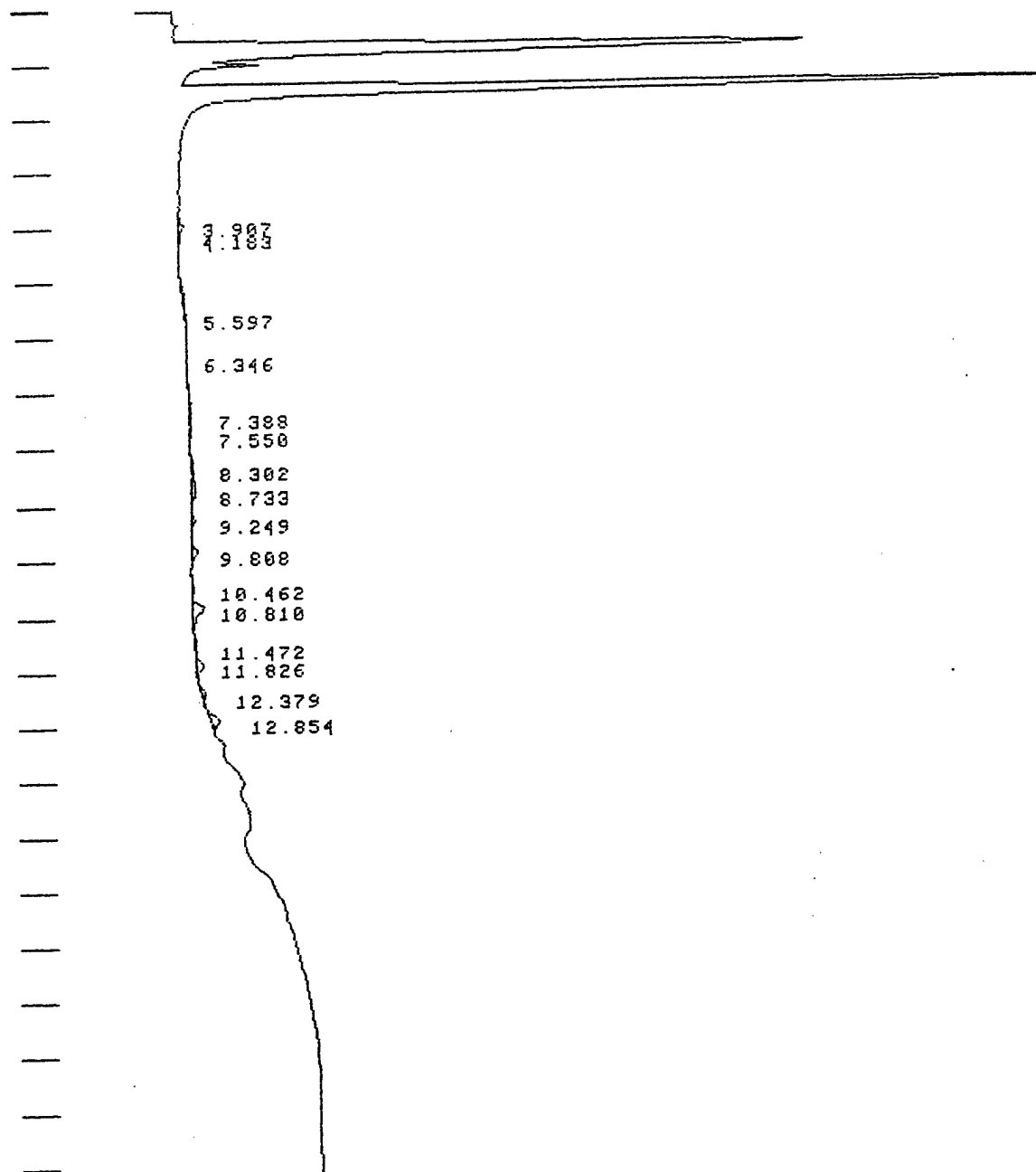
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 13067



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC111

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

12:37 3 MAR 94

SAMPLE: 9402010534

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 7007

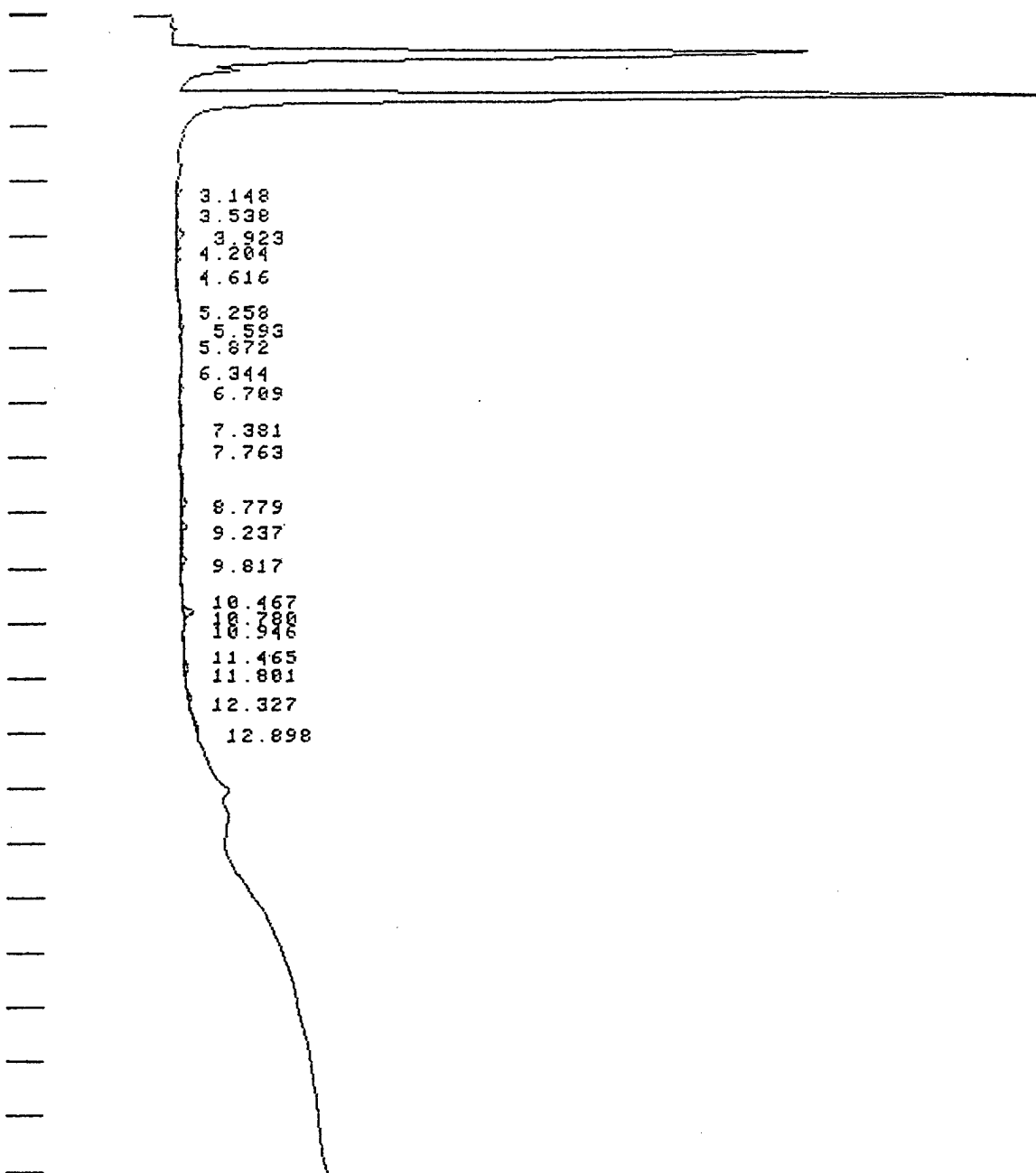
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC112

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

13:27 3 MAR 94

SAMPLE: 9402010535

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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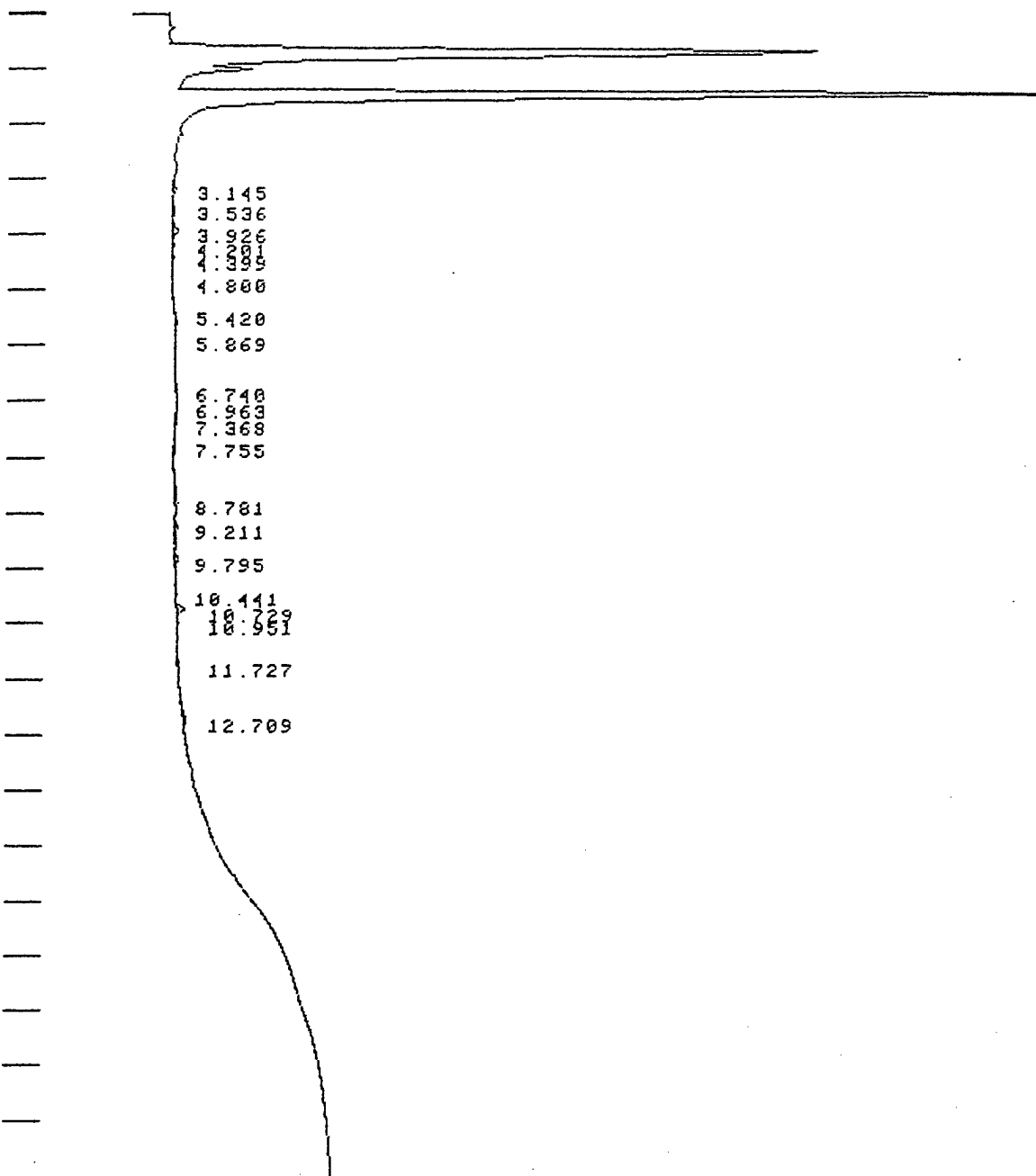
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 5894



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC113

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:59 3 MAR 94

SAMPLE: 9402010536 METHOD: TPHC CALCULATION: A% - ANALYS - OP

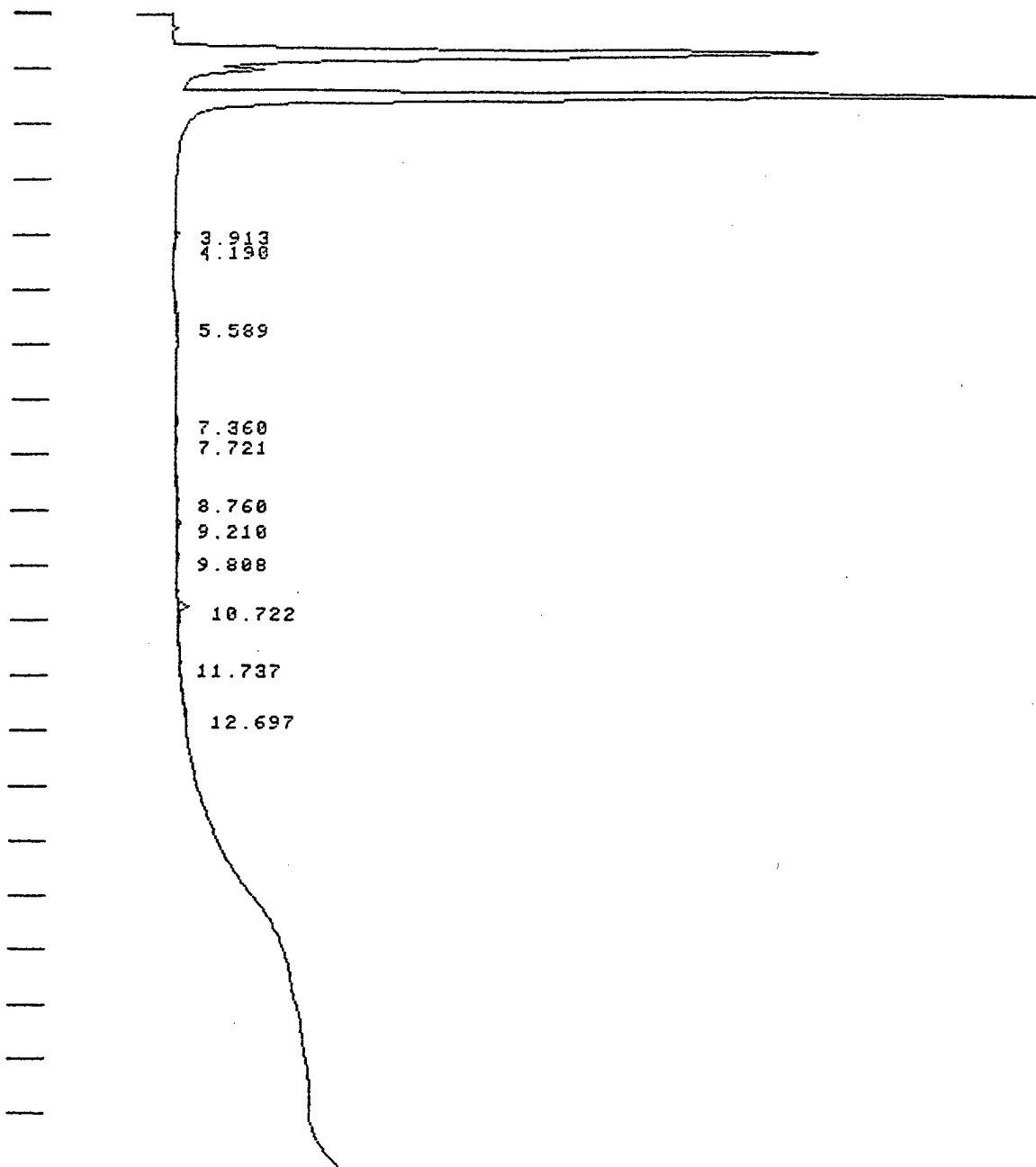
PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 3346



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC114

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

14:33 3 MAR 94

SAMPLE: 9402010537

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 3221

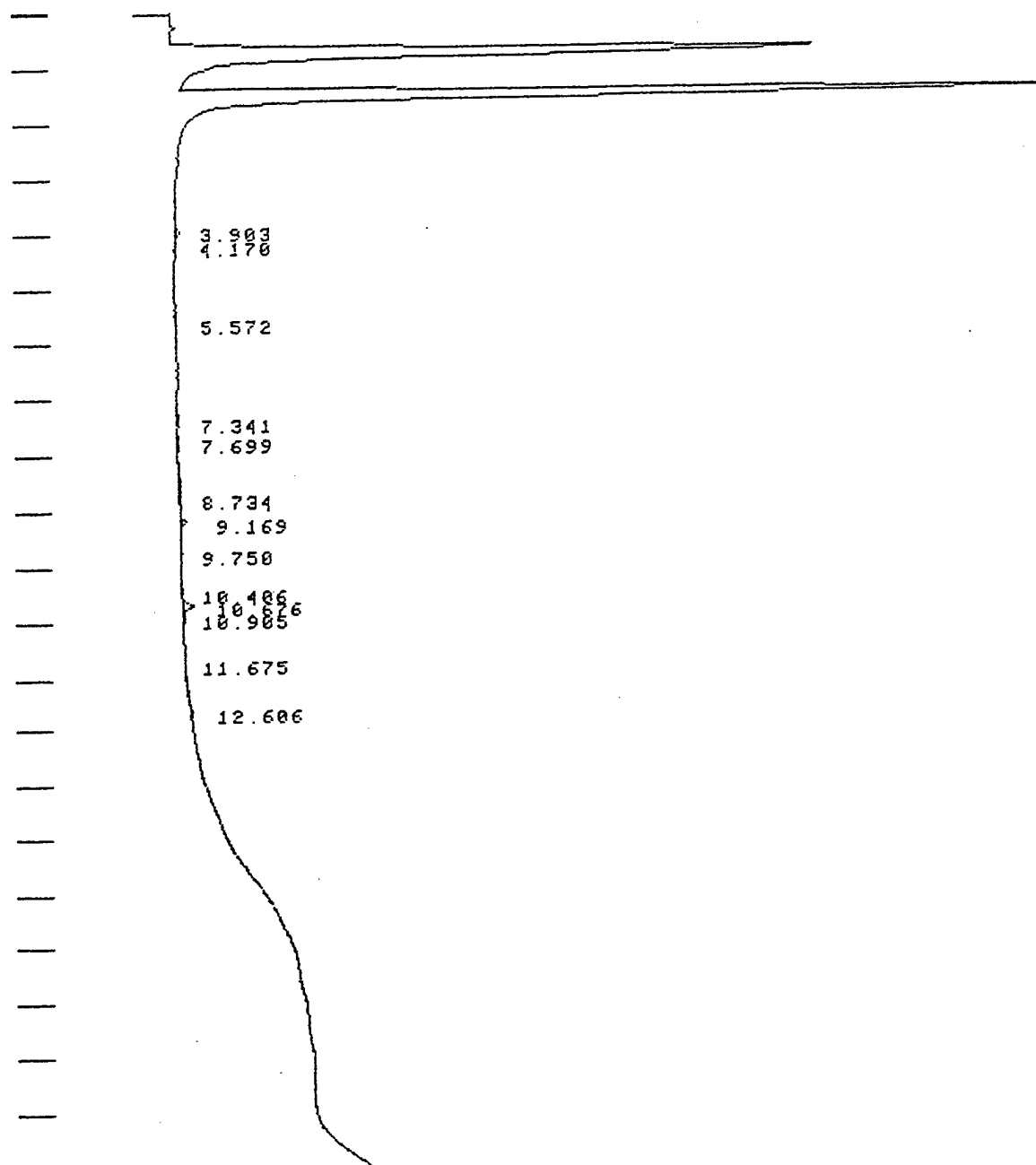
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC115

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

15:05 3 MAR 94

SAMPLE: 9402010538

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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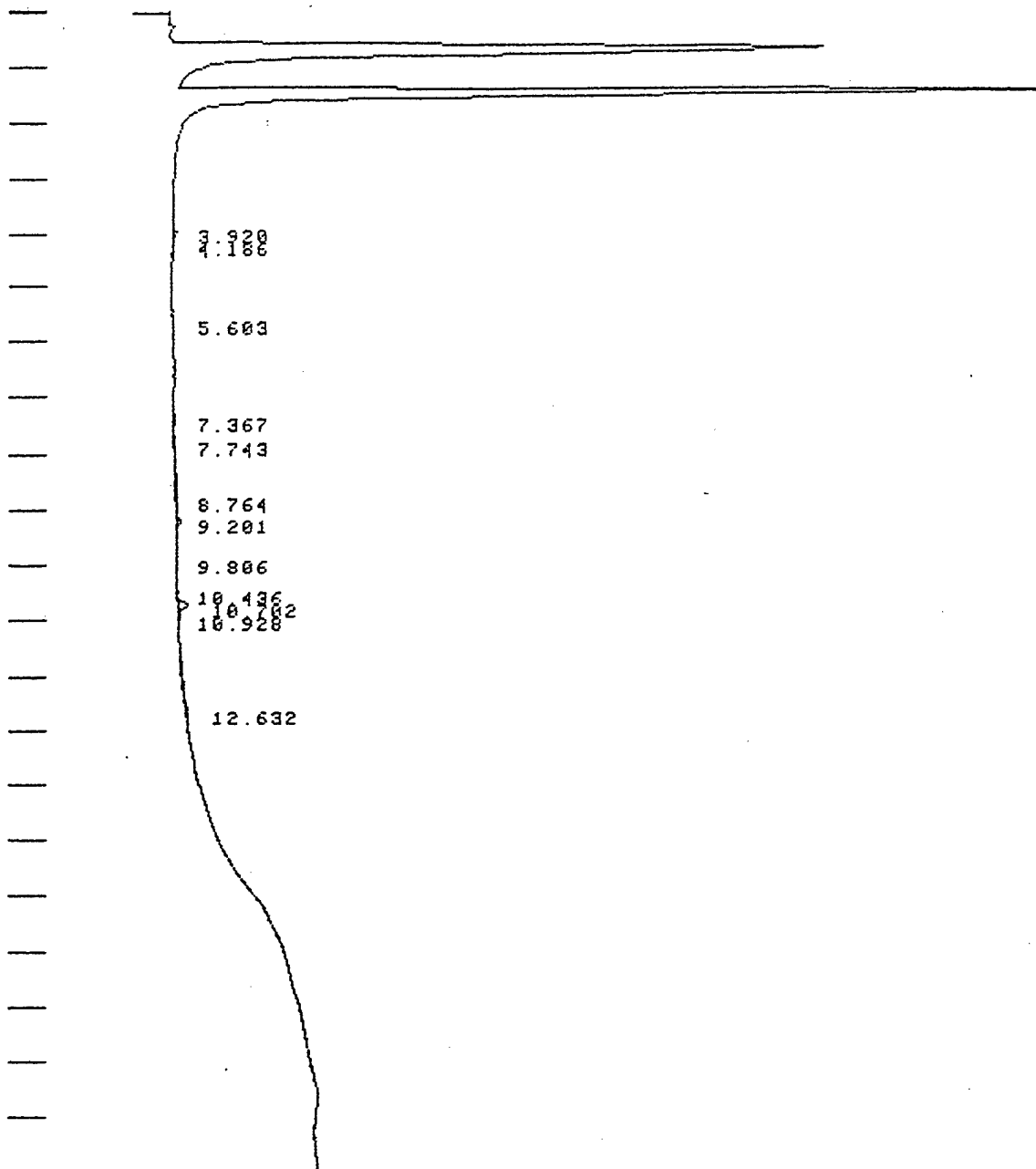
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 2399



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC116

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 15:35 3 MAR 94

SAMPLE: 9402010539 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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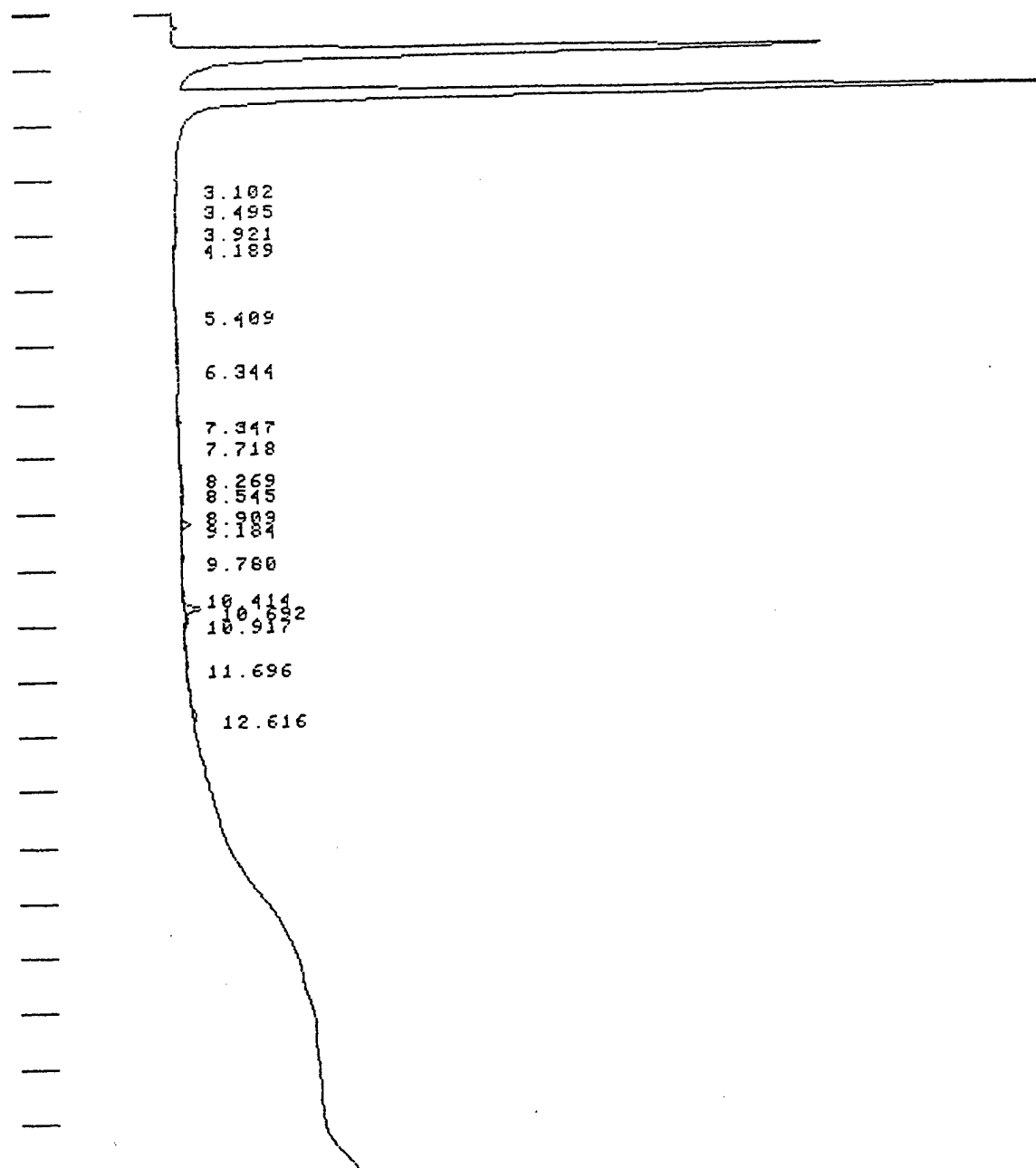
TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 2097

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC117

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

16:08 3 MAR 94

SAMPLE: 540

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 3108

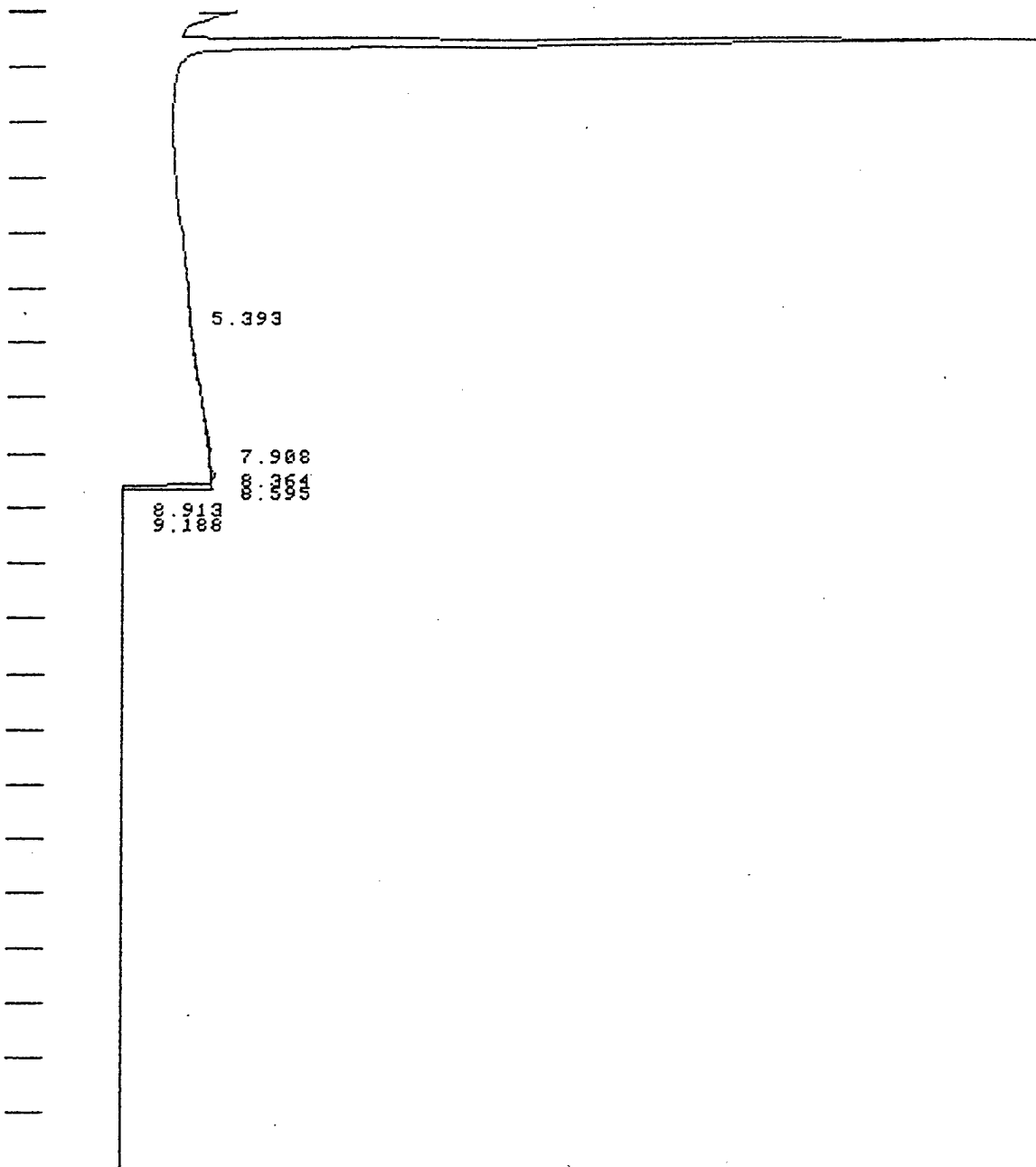
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC118

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

7:23 4 MAR 94

SAMPLE: EXTR. BLANK METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 67511

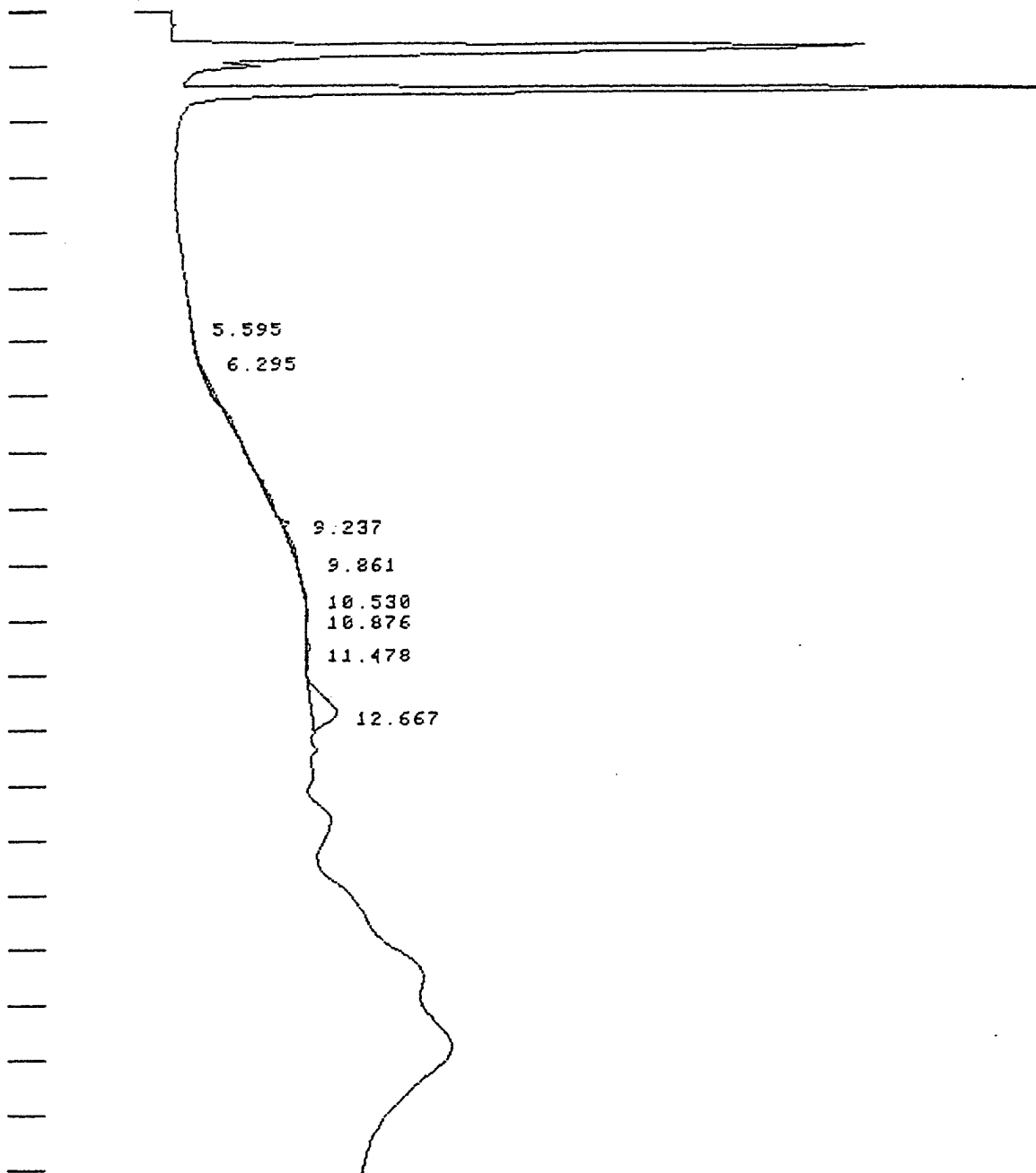
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CORRECT SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC122

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

7:21 7 MAR 94

SAMPLE: 940200541

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 13553

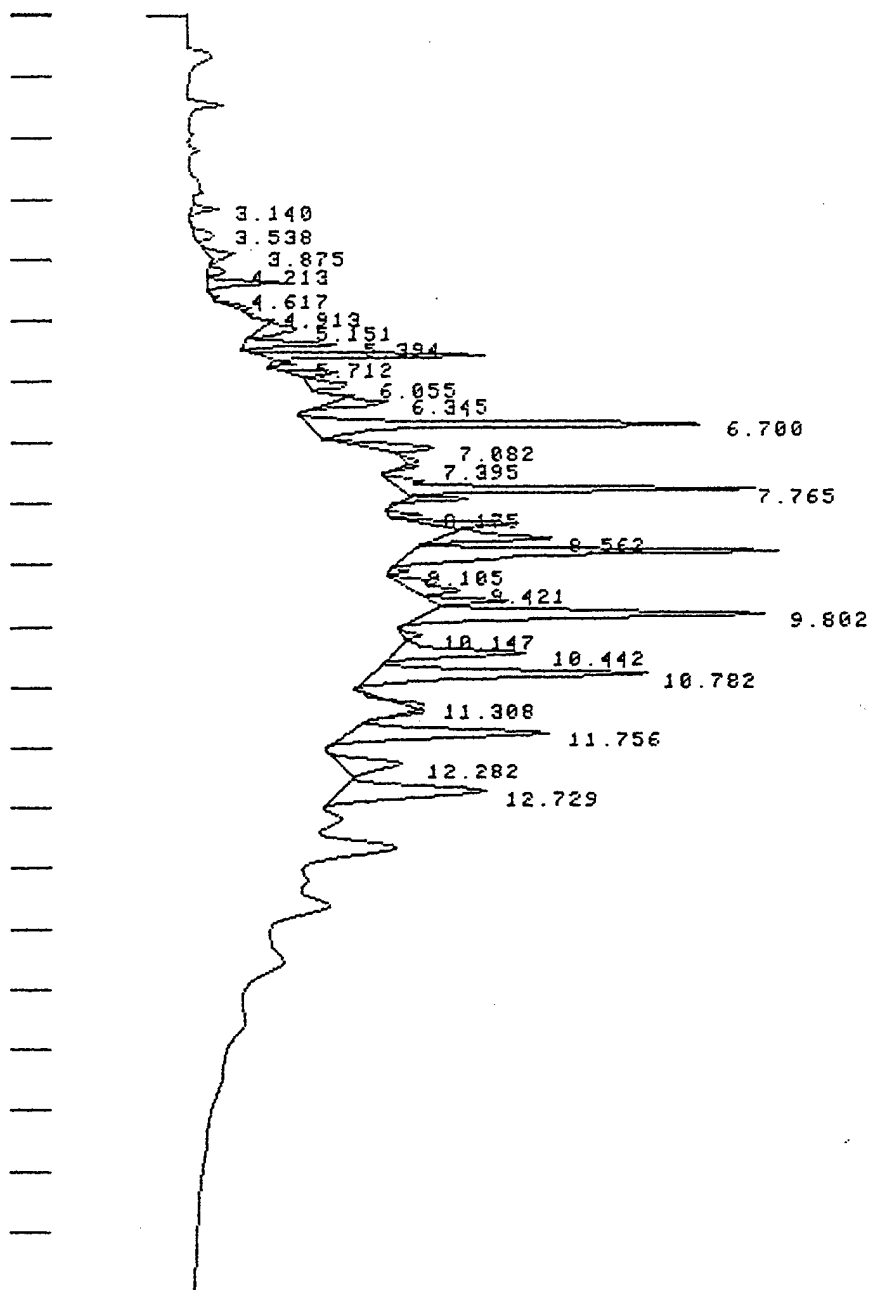
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC123

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

7:55 7 MAR 94

SAMPLE: 541 SPK

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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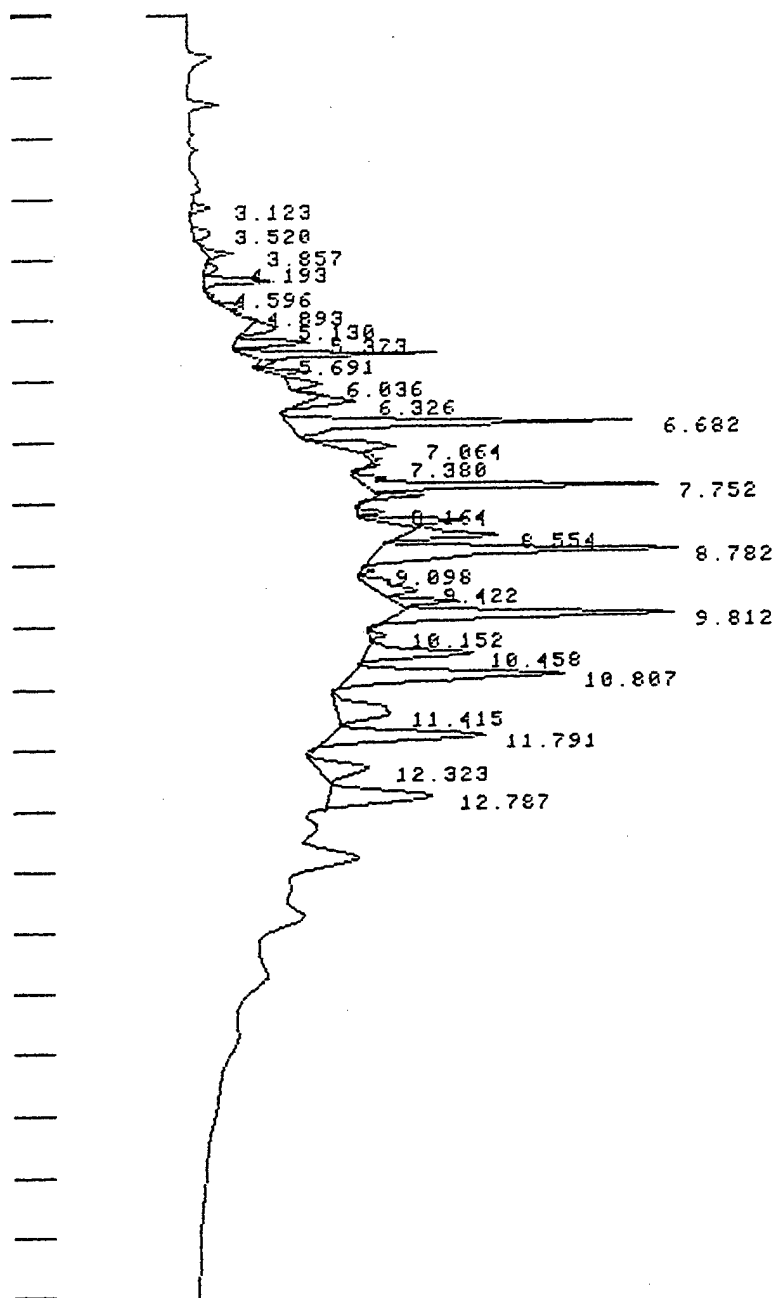
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 6780890



CHART SPEED 0.8 CM/MIN  
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC124

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

9:02 7 MAR 94

SAMPLE: 542 541 MS DOP METHOD: TPHC

CALCULATION: A% - ANALYS - OP

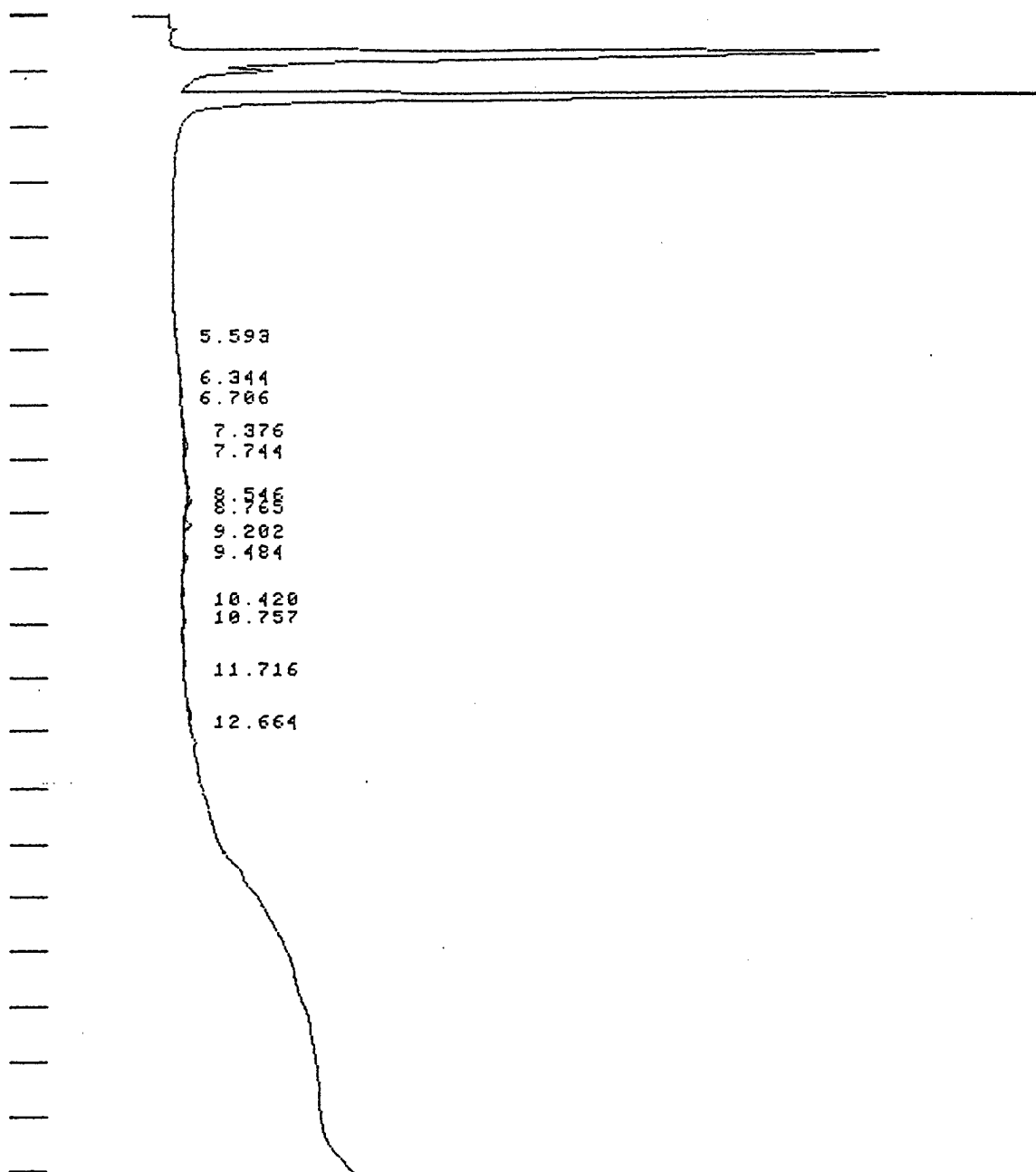
PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 5710393



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC125

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

9:32 7 MAR 94

SAMPLE: 542

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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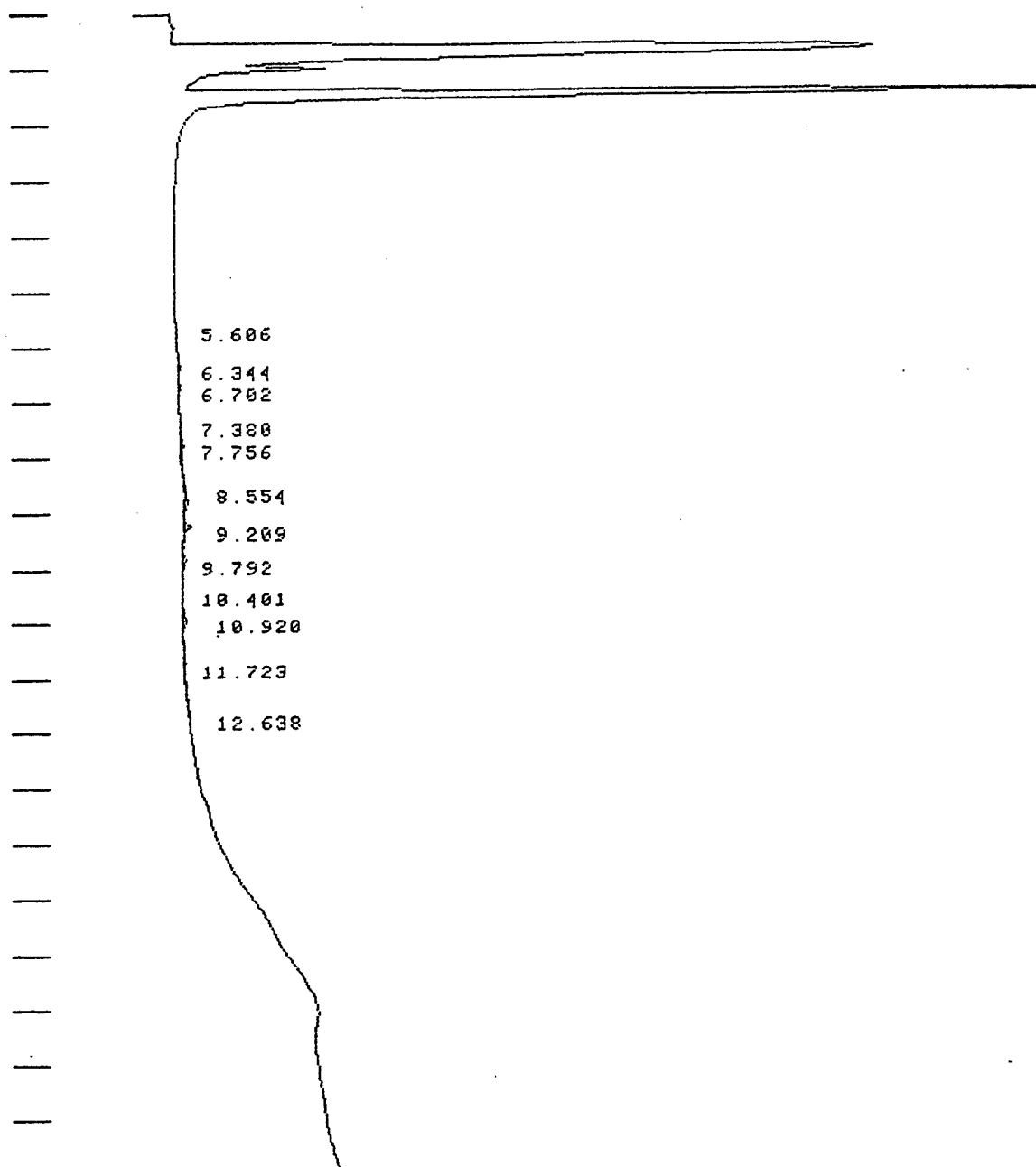
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 2728



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC126

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

10:03 7 MAR 94

SAMPLE: 543

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 2245

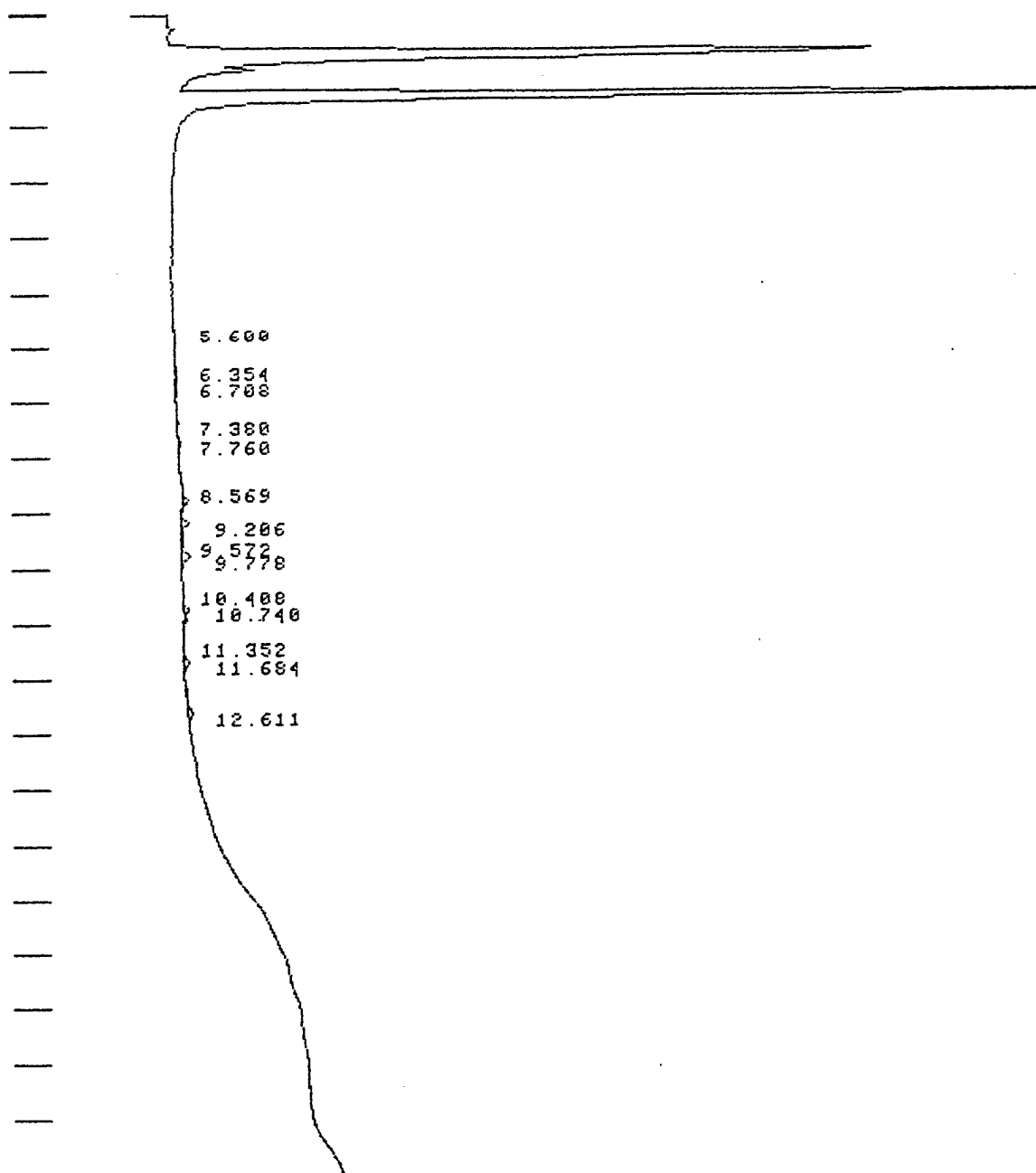
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC127

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

10:35 7 MAR 94

SAMPLE: 544

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

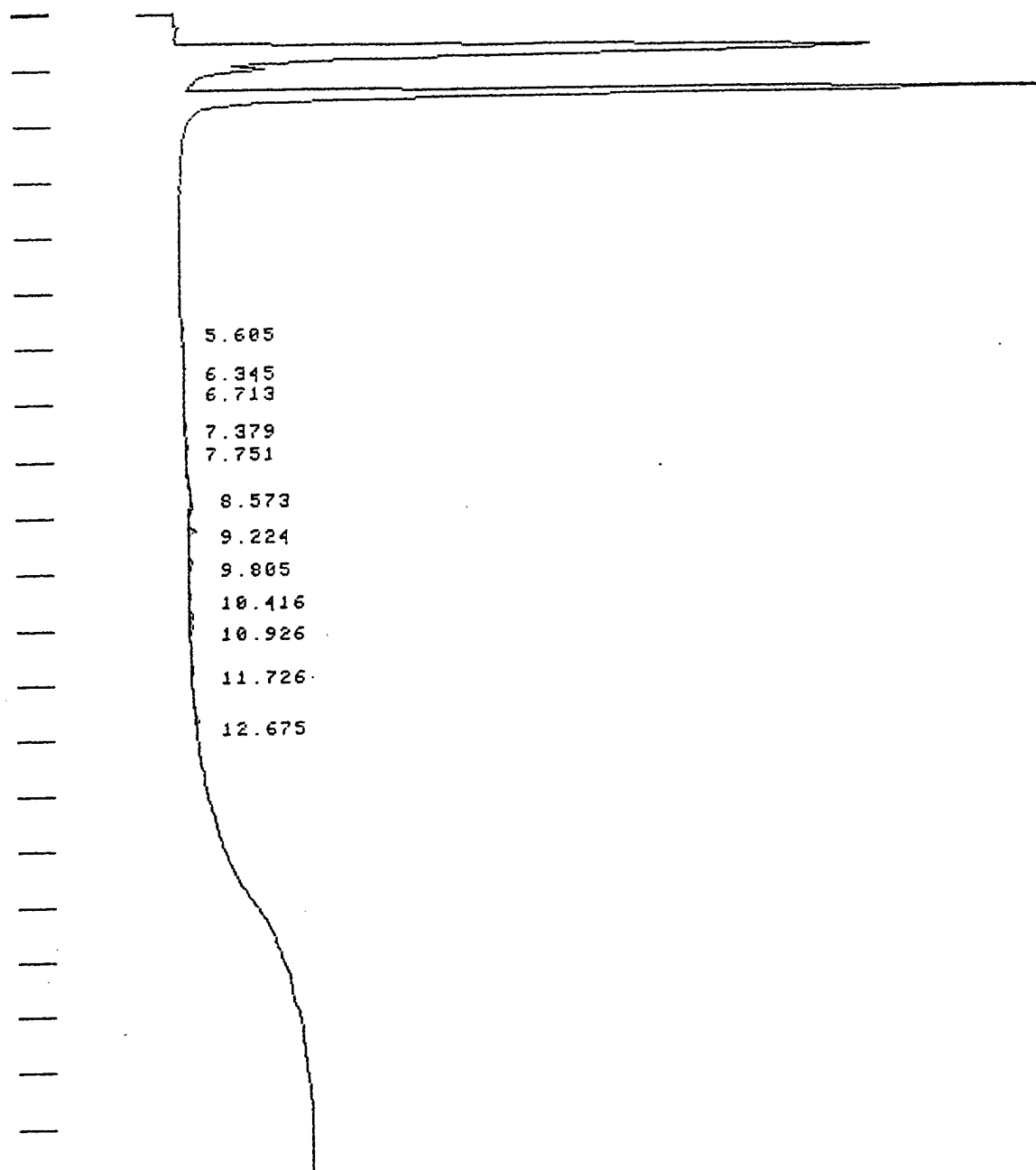
PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 3350



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC128

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

11:13 7 MAR 94

SAMPLE: 551

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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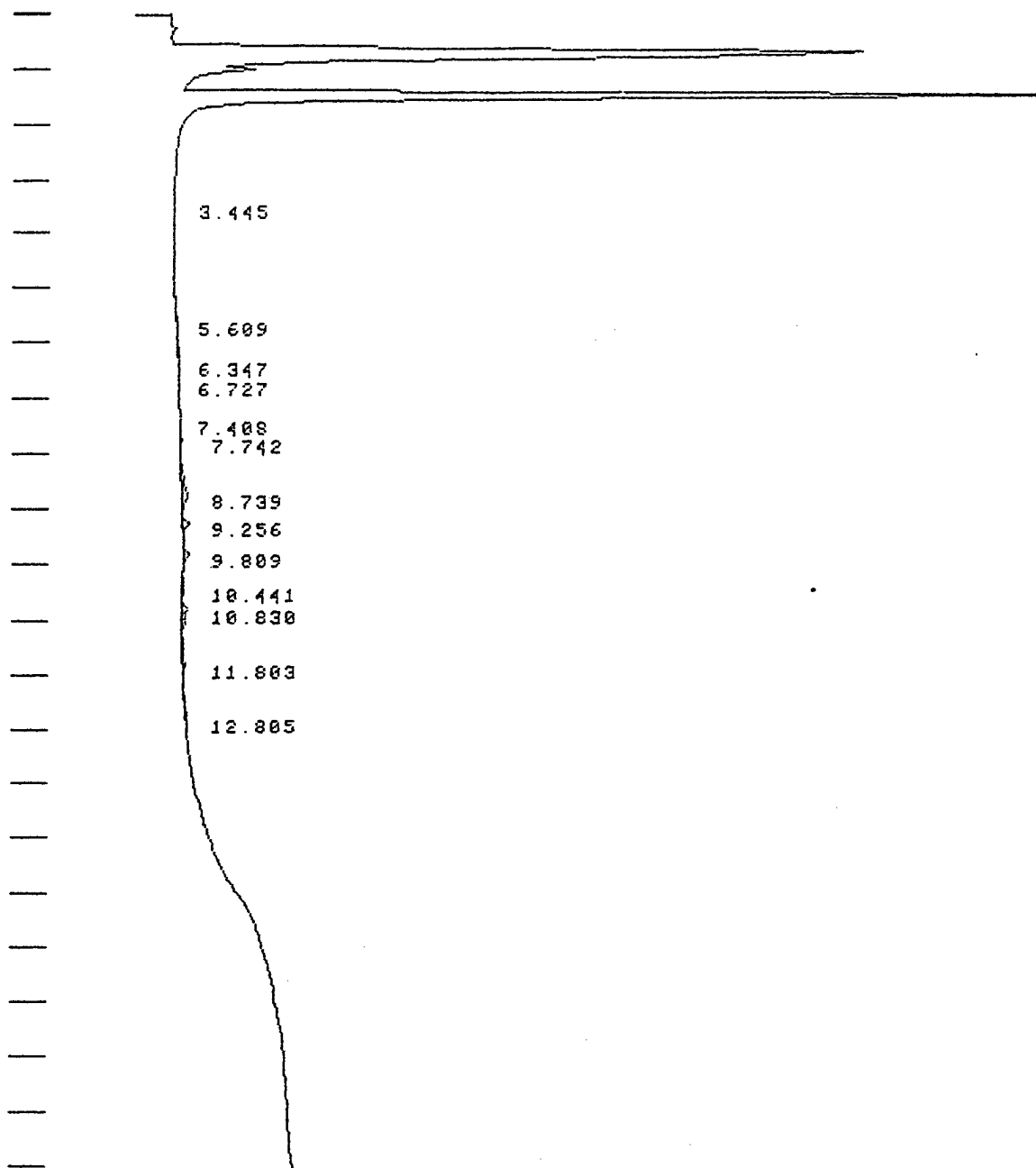
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 2243



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC129

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

12:17 7 MAR 94

SAMPLE: 552

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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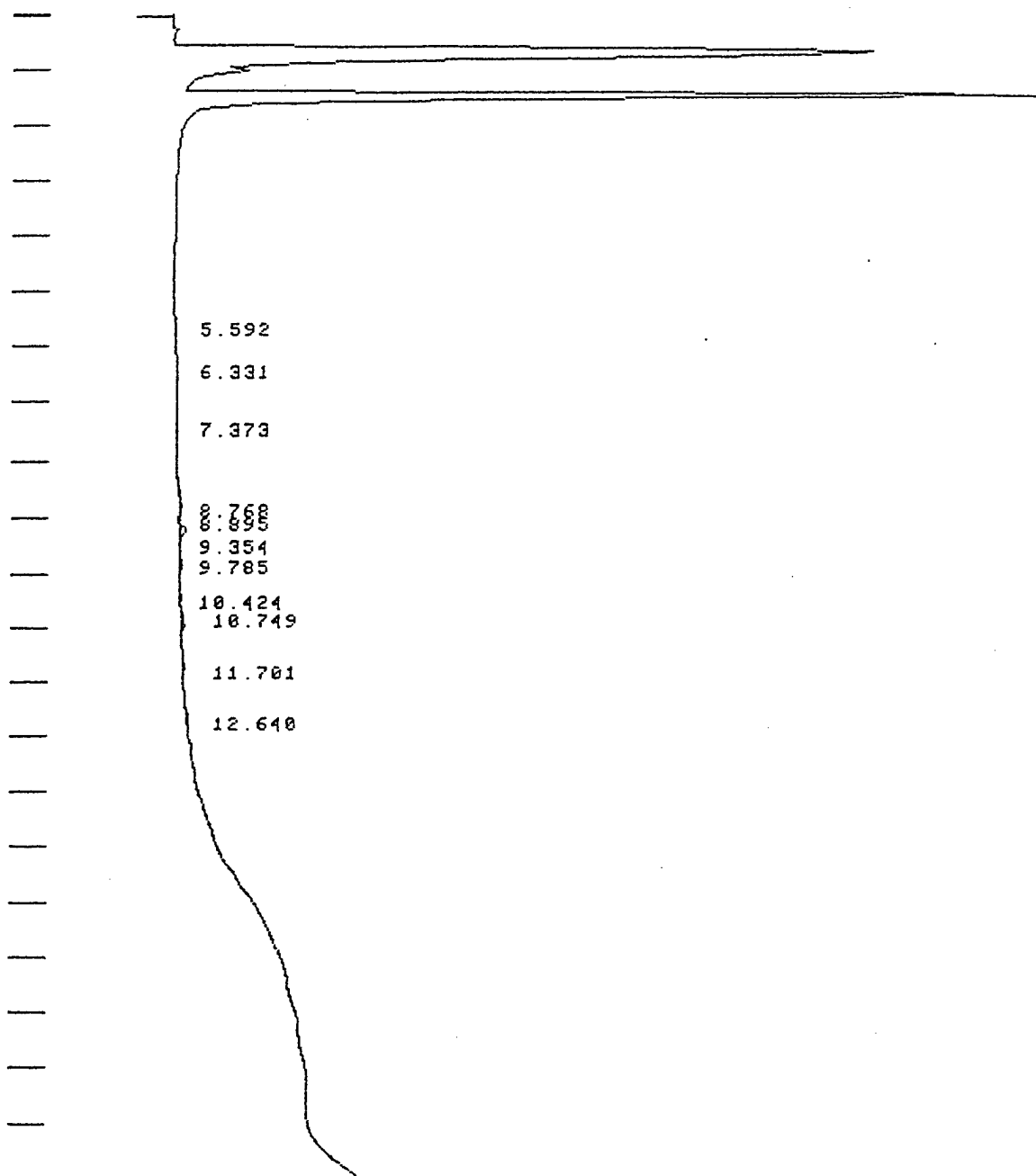
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 4127



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC130

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

12:46 7 MAR 94

SAMPLE: 553

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

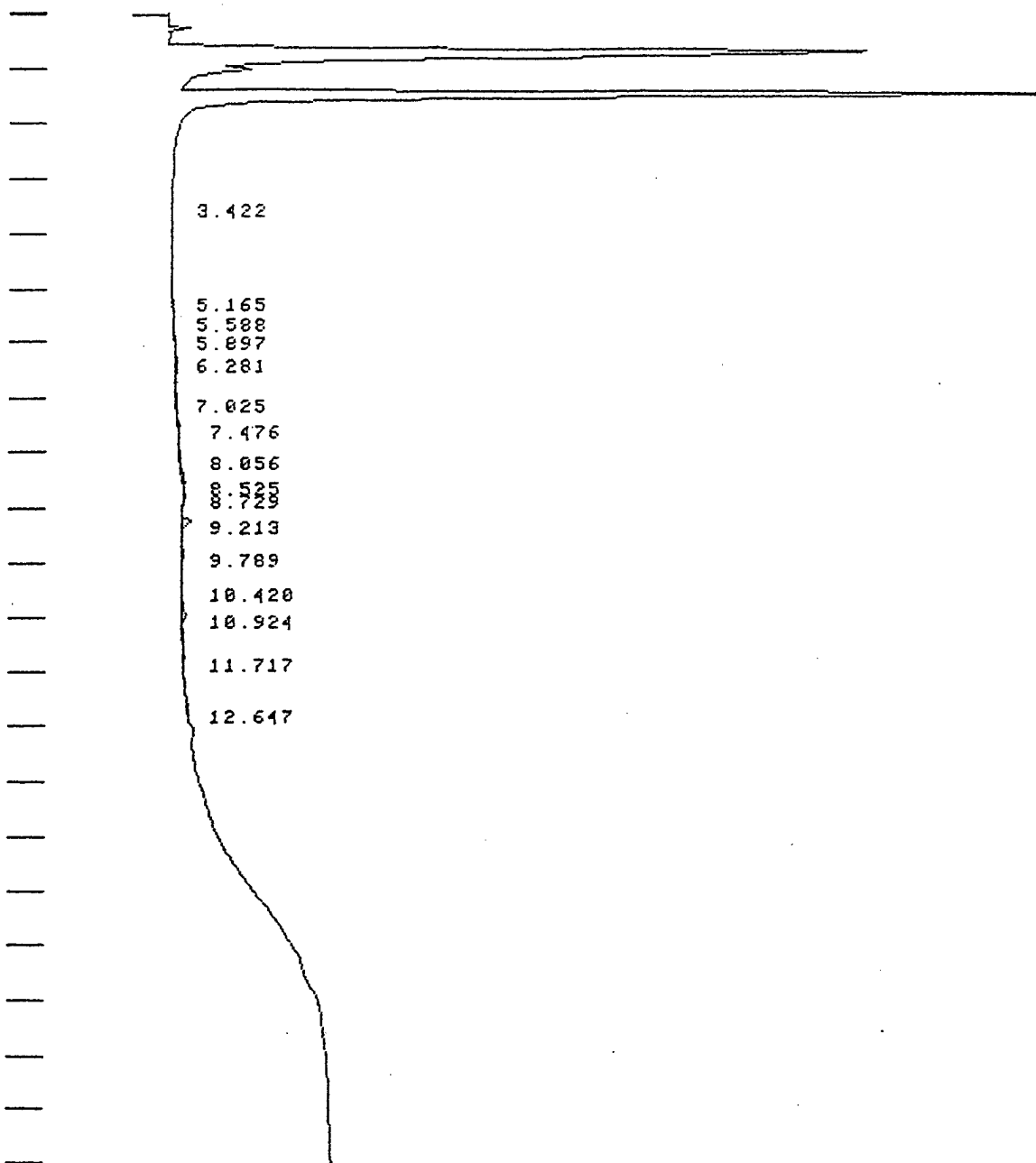
PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 1488



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC131

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 13:21 7 MAR 94

SAMPLE: 554 METHOD: TPHC CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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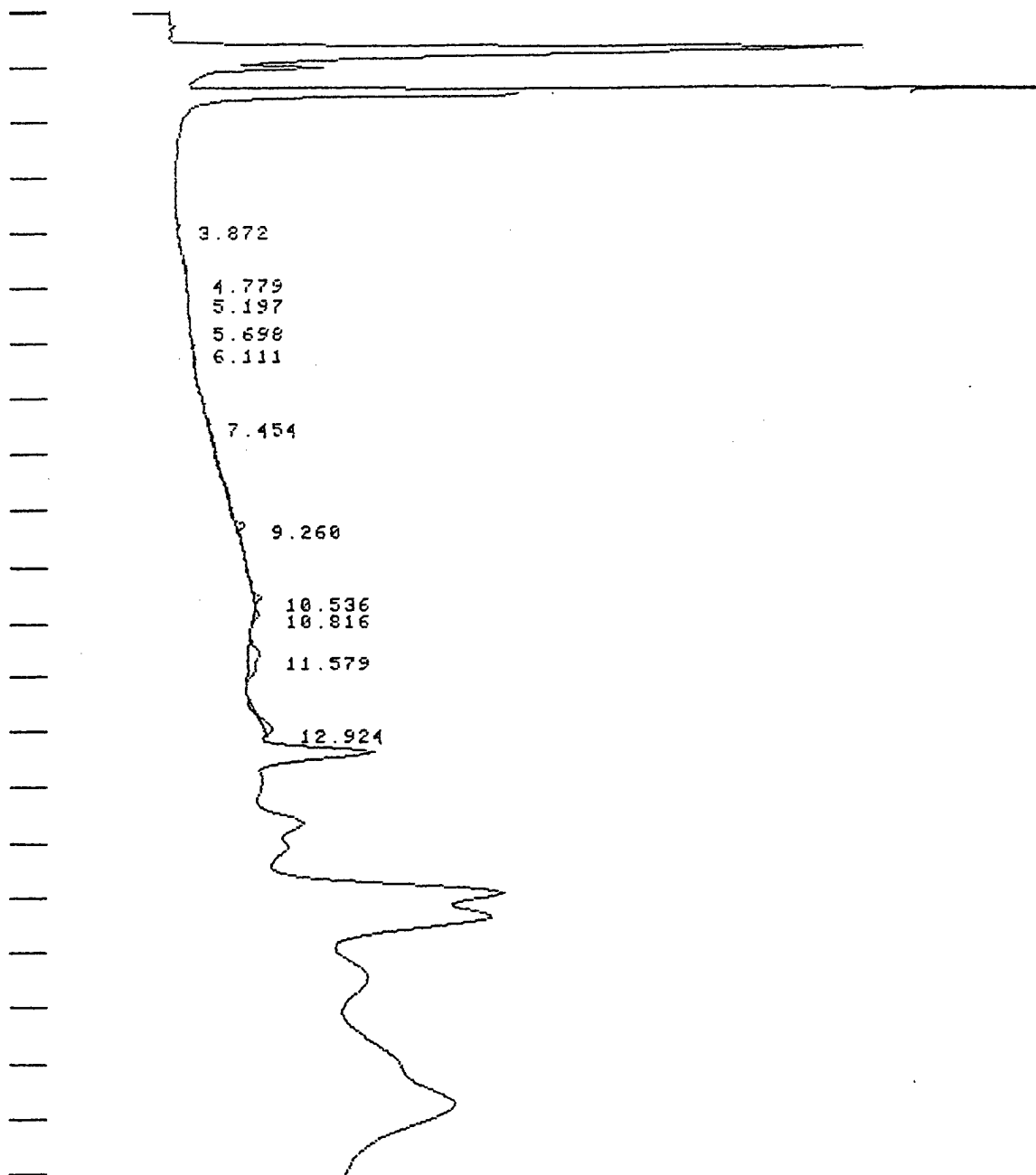
TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 2944

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000



CARRI SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC142

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

12:18 9 MAR 94

SAMPLE: 555

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 10555

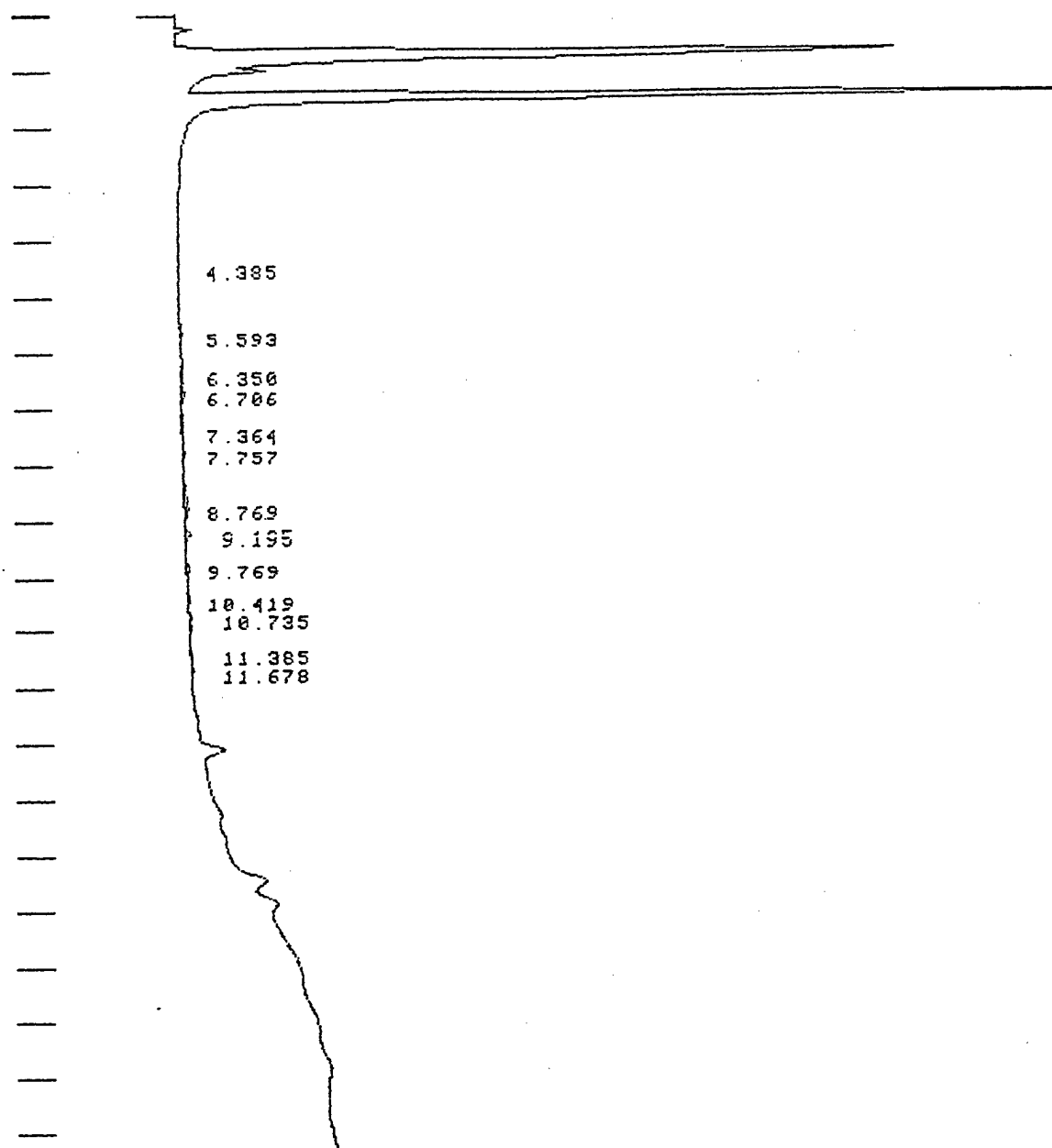
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC132

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

13:50 7 MAR 94

SAMPLE: 556

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 2514

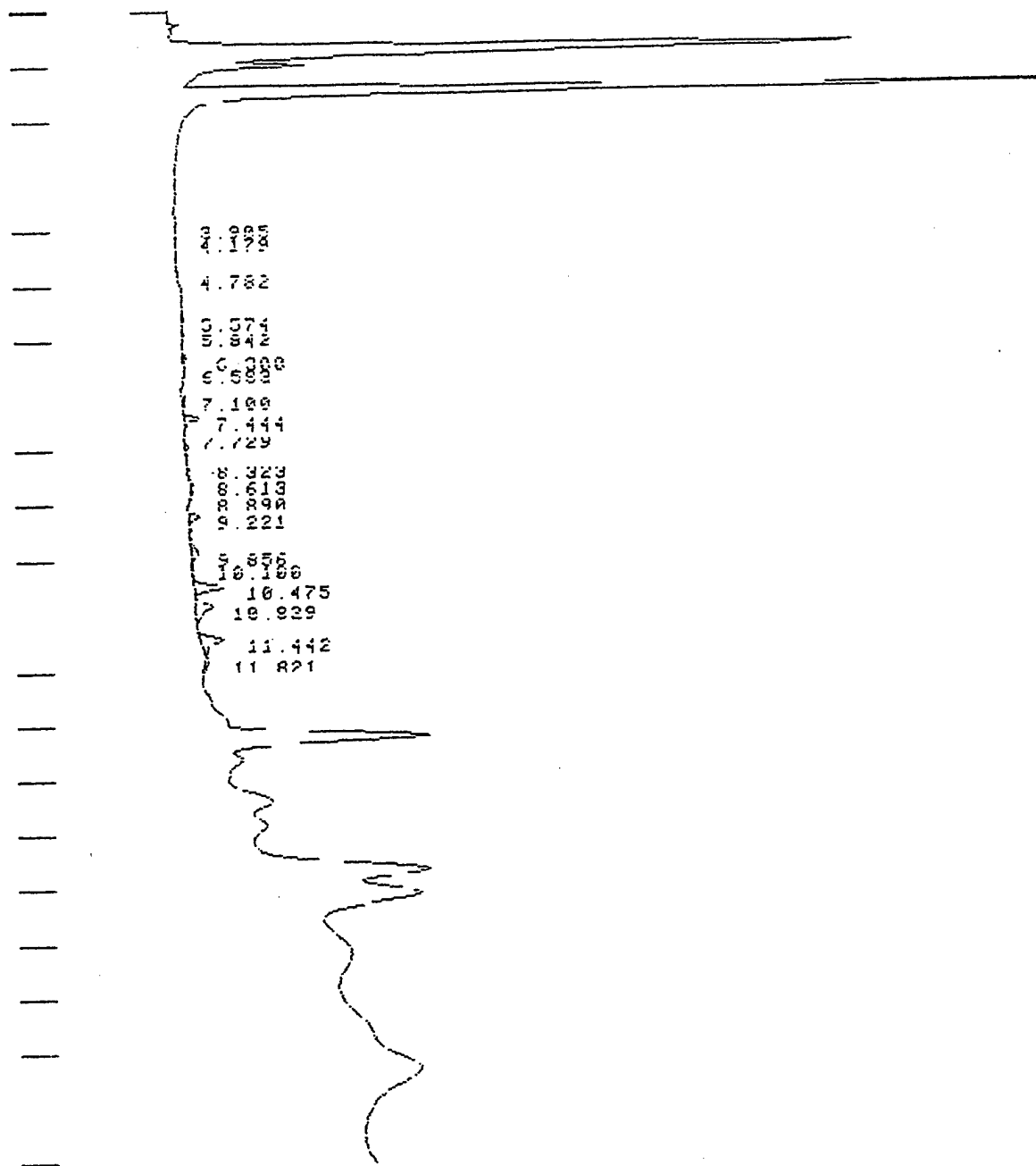
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC143

CHANNEL: 18 - 1 TITLE: TPHC BY MODIFIED 8015

13:02 9 MAR 84

SAMPLE: 557

METHOD: TPHC

CALCULATION: AX - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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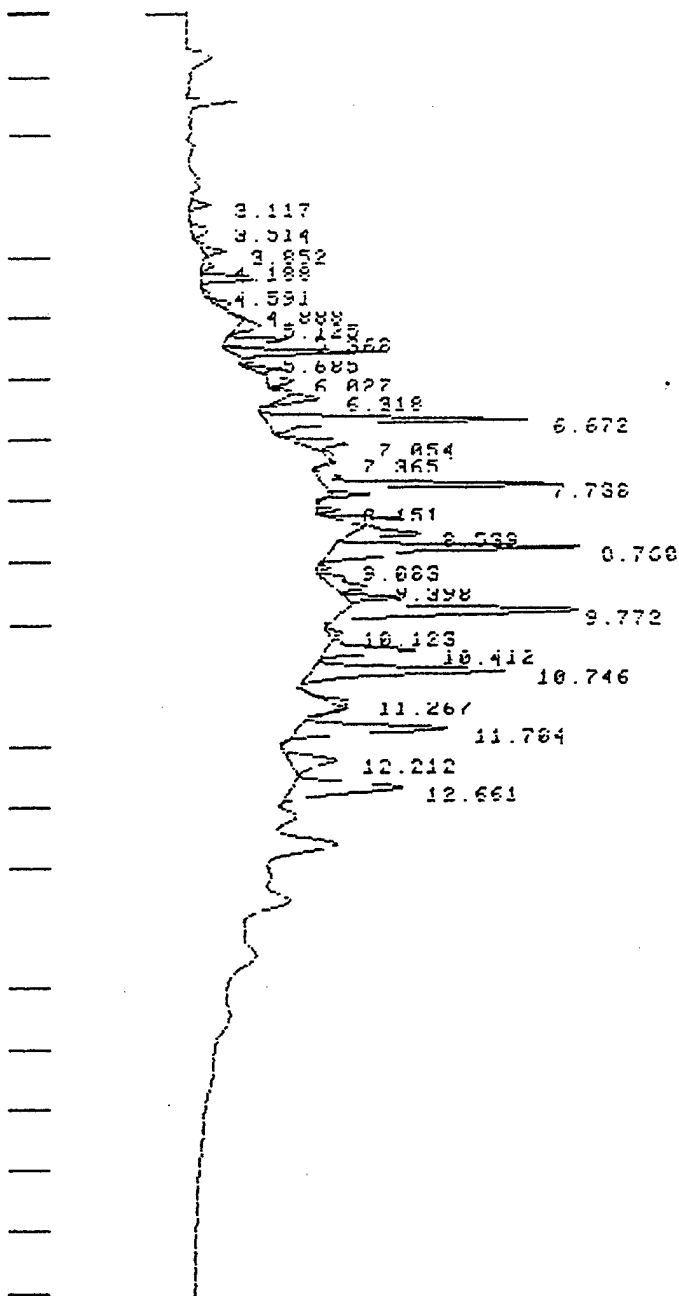
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 10166



CHART SPEED 0.8 CM/MIN  
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC144

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

13:31 9 MAR 94

SAMPLE: 557 SPK

METHOD: TPHC

CALCULATION: AX - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 4508078

0.0000

ANT STD.

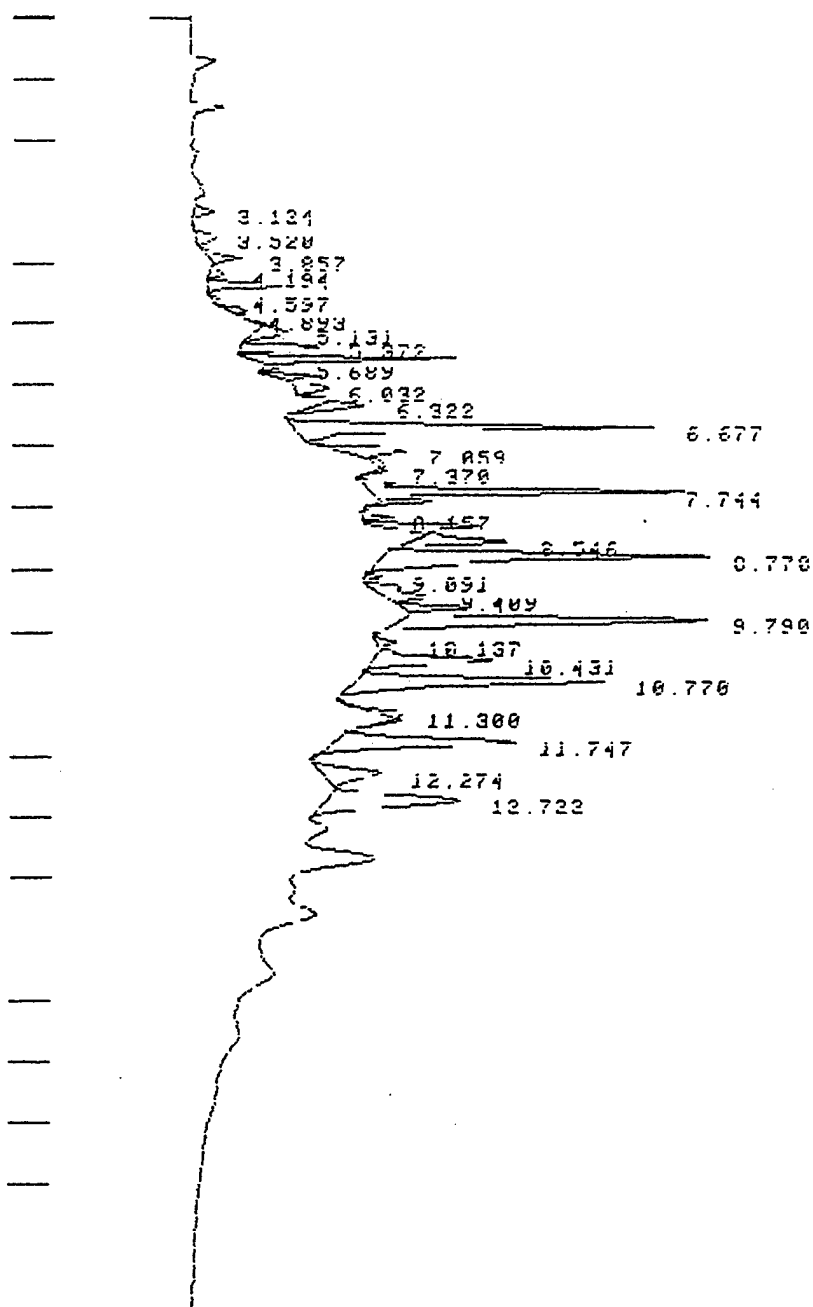
0.0000

MIN TYPED

0.0000



CHART SPEED 0.8 CM/MIN  
ATTEN: 256 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC145

CHANNEL: 18 - 1 TITLE: TPHC BY MODIFIED 8015

14:14 9 MAR 94

SAMPLE: SPK DUP

METHOD: TPHC

CALCULATION: AZ - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000 0

TOTAL UNIDENT AREA/HT: 6045594

DIVISOR: 1.000000

AMT STD:

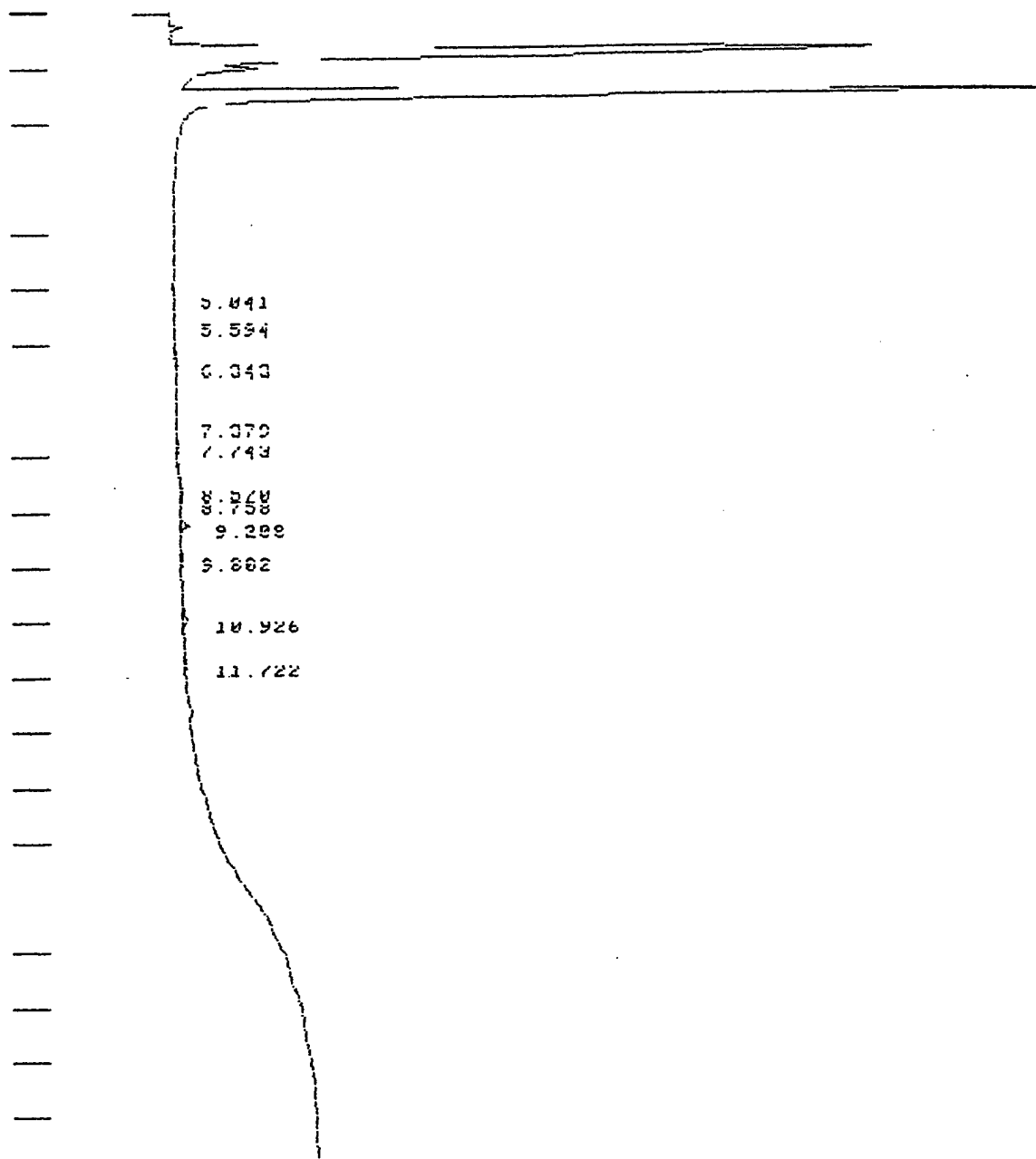
1.000000

MIN TYP: 100

1.000000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC133

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 14:22 7 MAR 94

SAMPLE: 558 METHOD: TPHC CALCULATION: AX - ANALYS - QP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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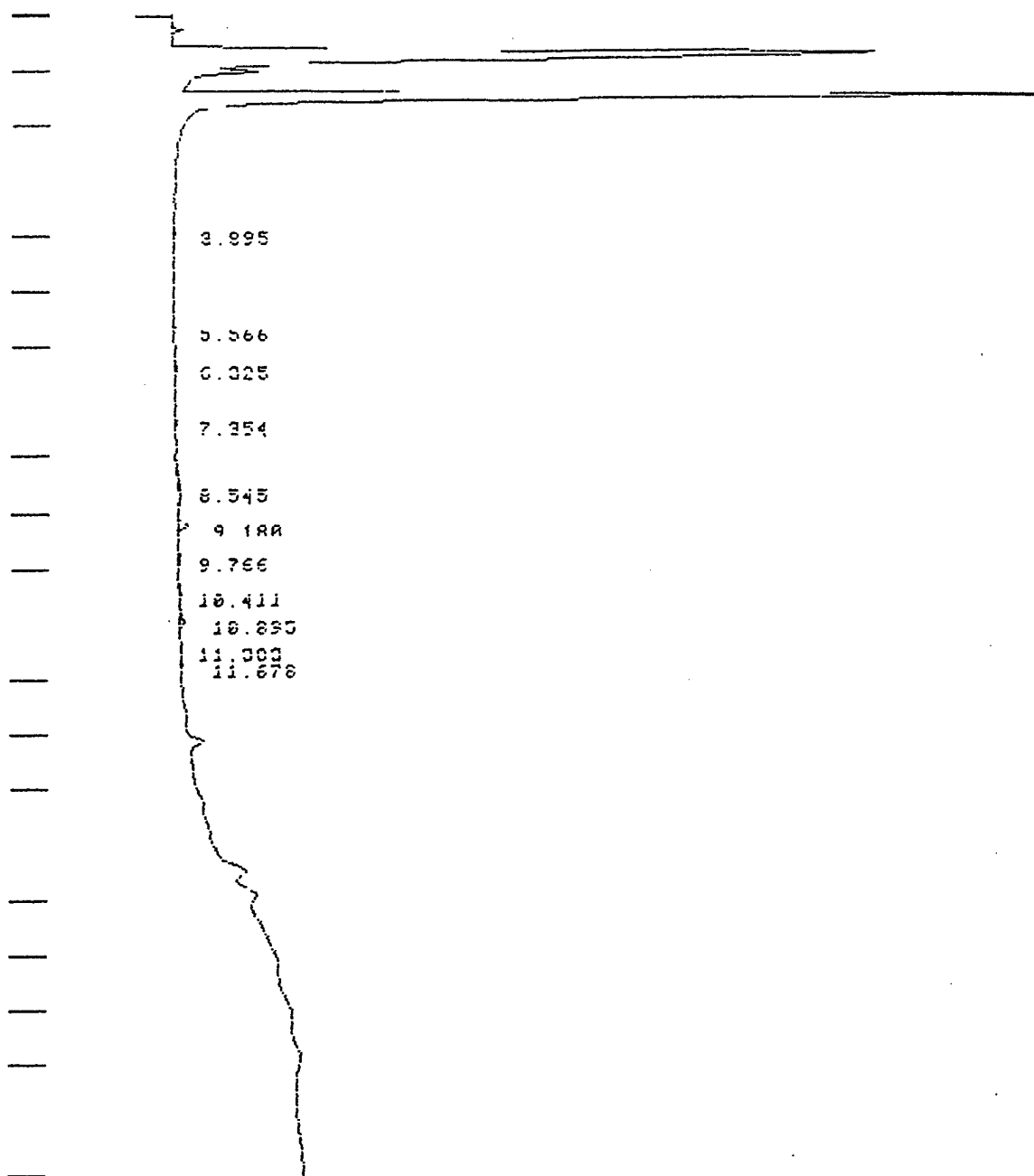
TOTALS: 0.0000 0

TOTAL UNIDENT AREA/HT: 2062

DIVISOR: 1.00000 AMT STD: 1.00000 MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC134

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

14:53 7 MAR 94

SAMPLE: 559

METHOD: TPHC

CALCULATION: A% - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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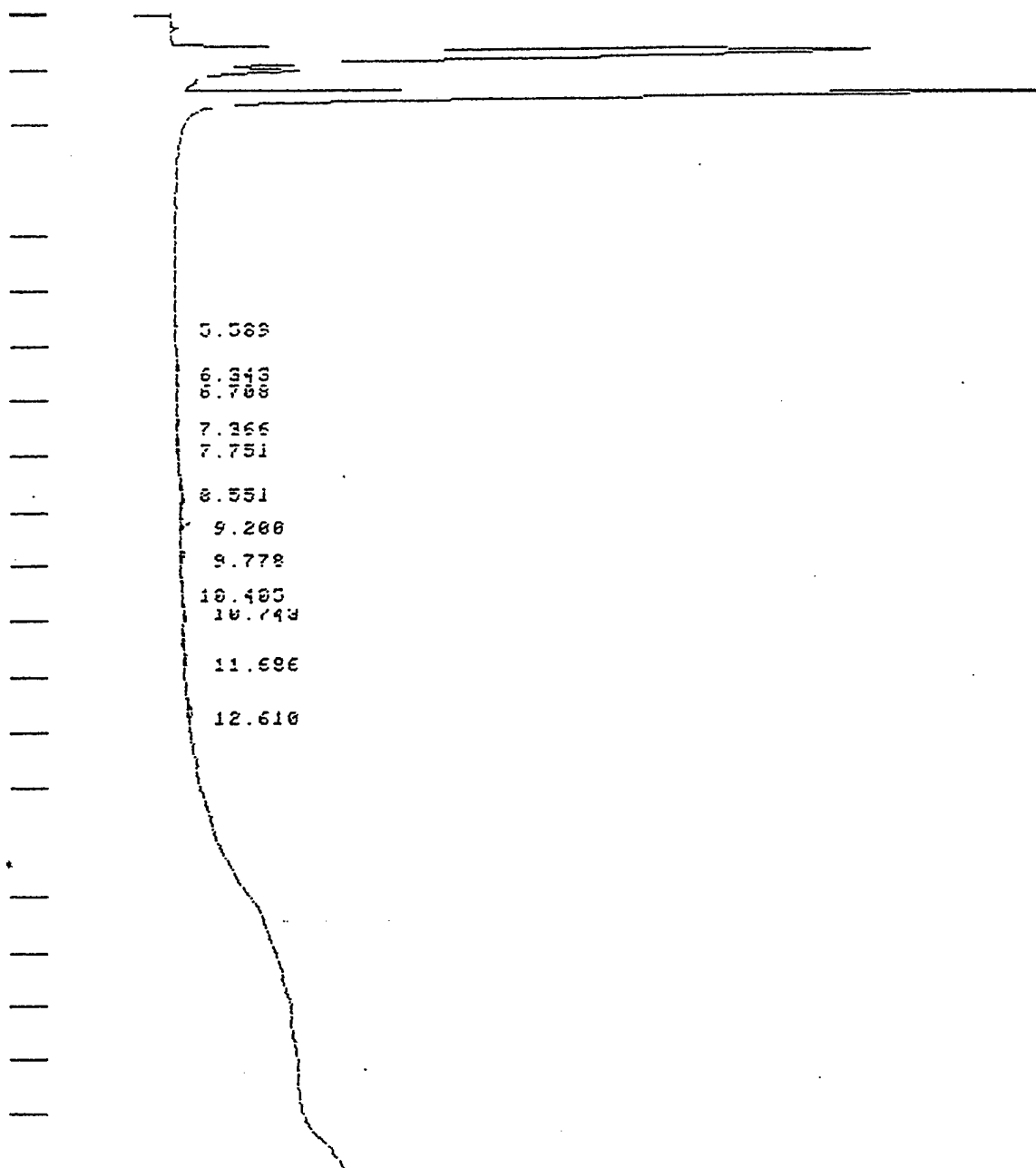
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 1976



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC135

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

15:28 7 MAR 94

SAMPLE: 560

METHOD: TPHC

CALCULATION: AX - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000 0

TOTAL UNIDENT AREA/HT: 2499

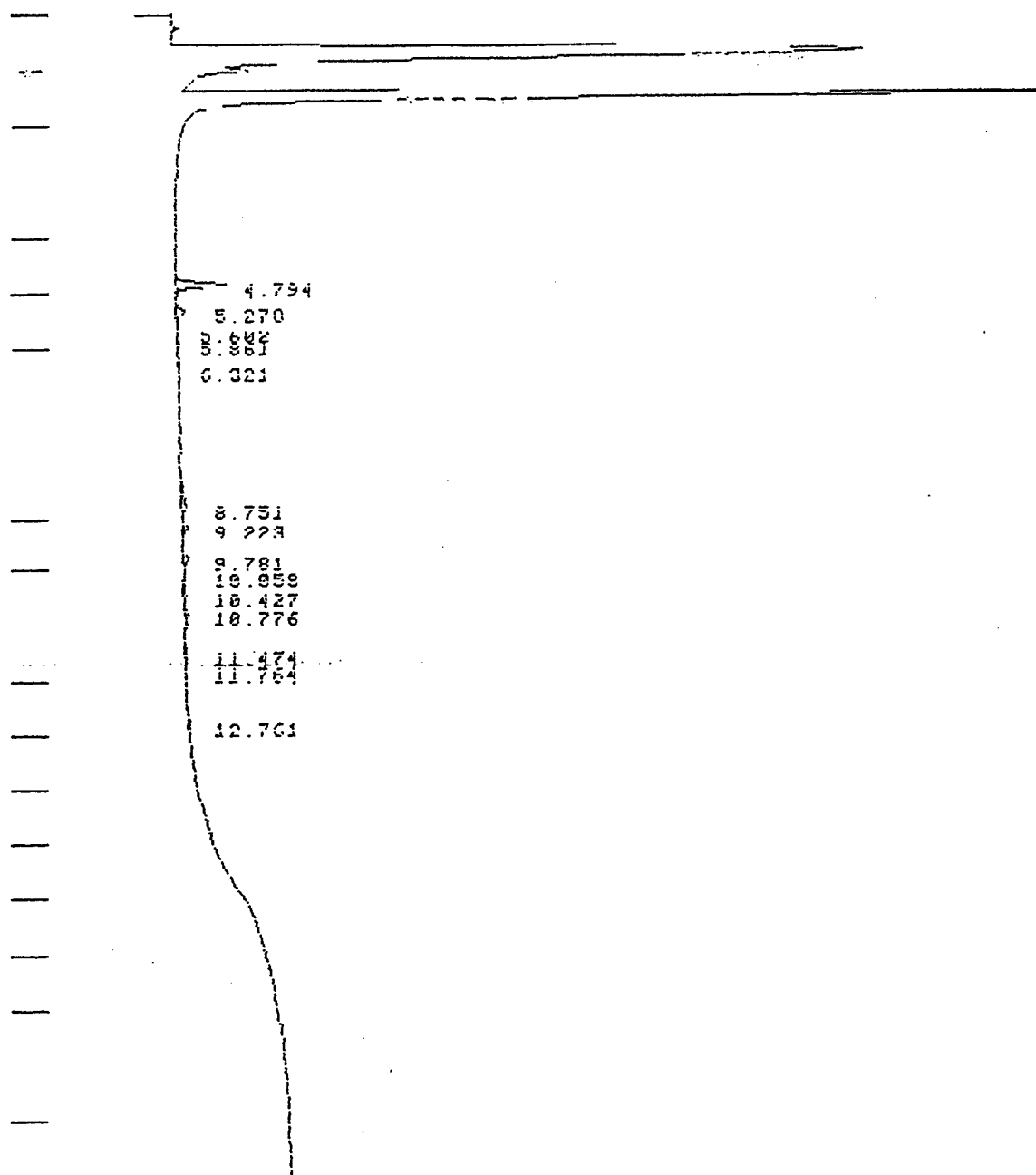
DIVISOR: 1.00000

AMT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC136

CHANNEL: 18 - 1 TITLE: TPHC BY MODIFIED 8015

16:24 7 MAR 94

SAMPLE: 561

METHOD: TPHC

CALCULATION: AX - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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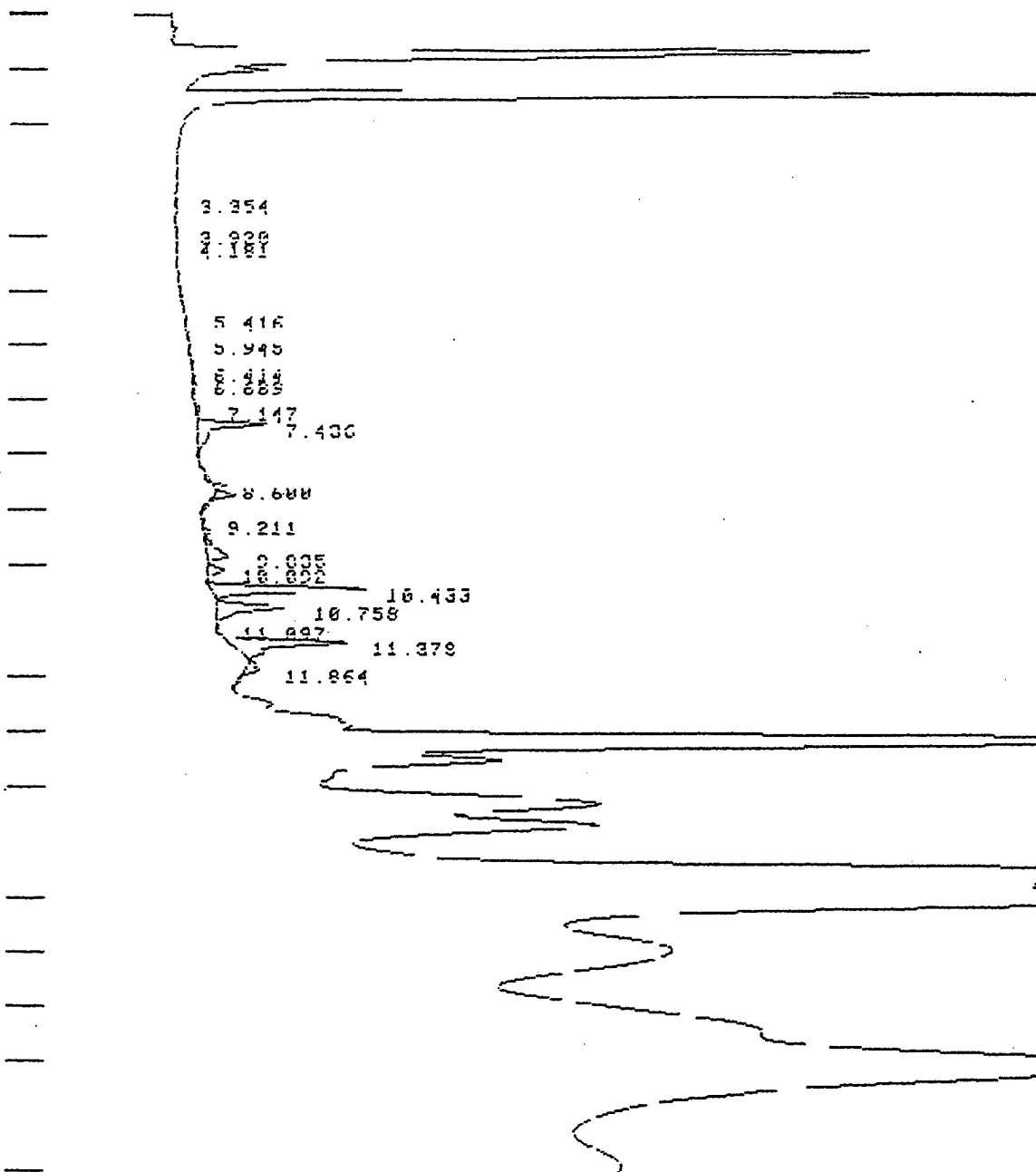
TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 5104



ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC146

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015 14:50 9 MAR 94

SAMPLE: 562 METHOD: TPHC CALCULATION: AX - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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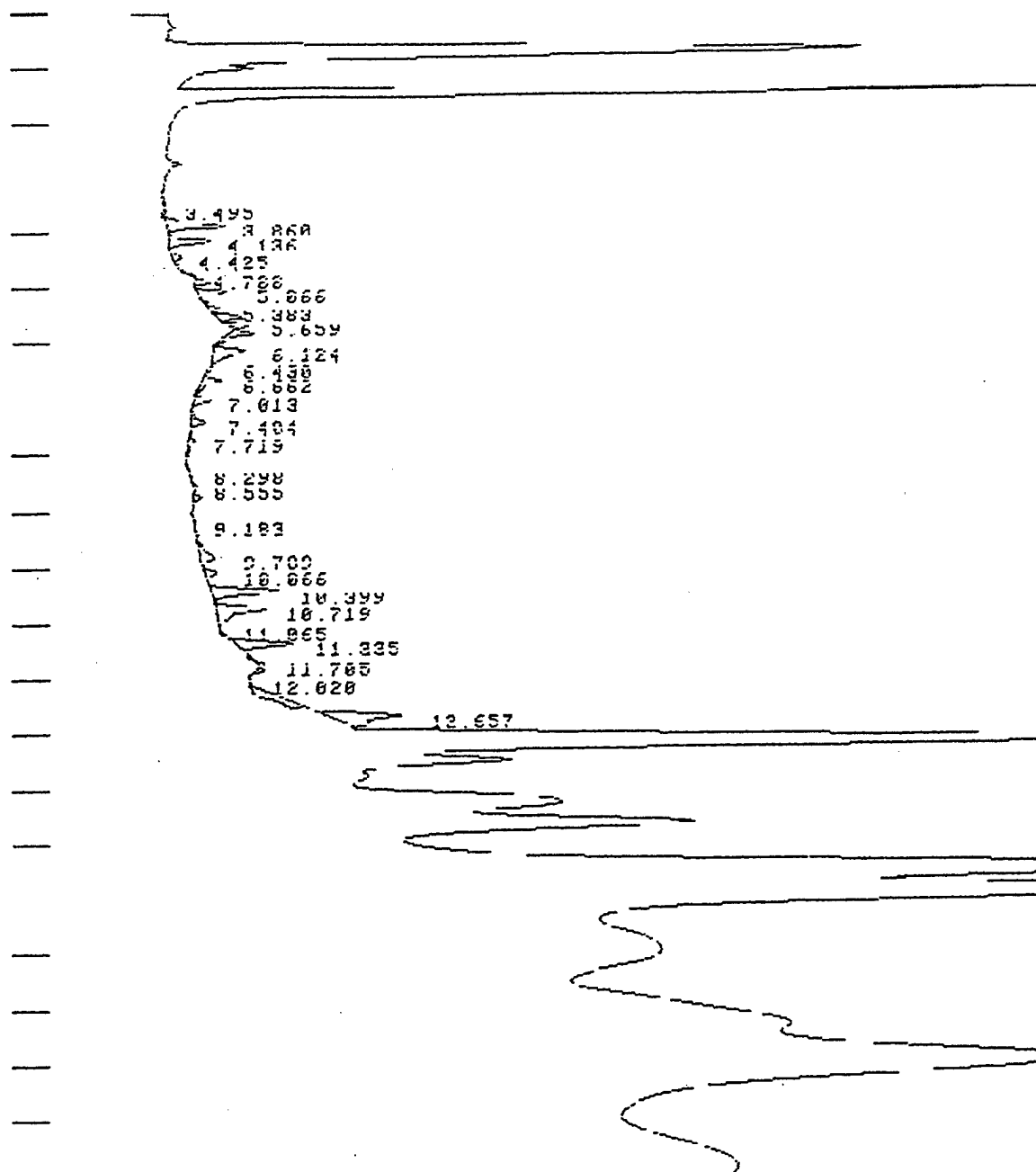
TOTALS:		0.0000		0	
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TOTAL UNIDENT AREA/HT: 35638

DIVISOR: 1.00000 ANT STD: 1.00000 MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC147

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

15:18 9 MAR 84

SAMPLE: 563

METHOD: TPHC

CALCULATION: AX - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000

0

TOTAL UNIDENT AREA/HT: 37843

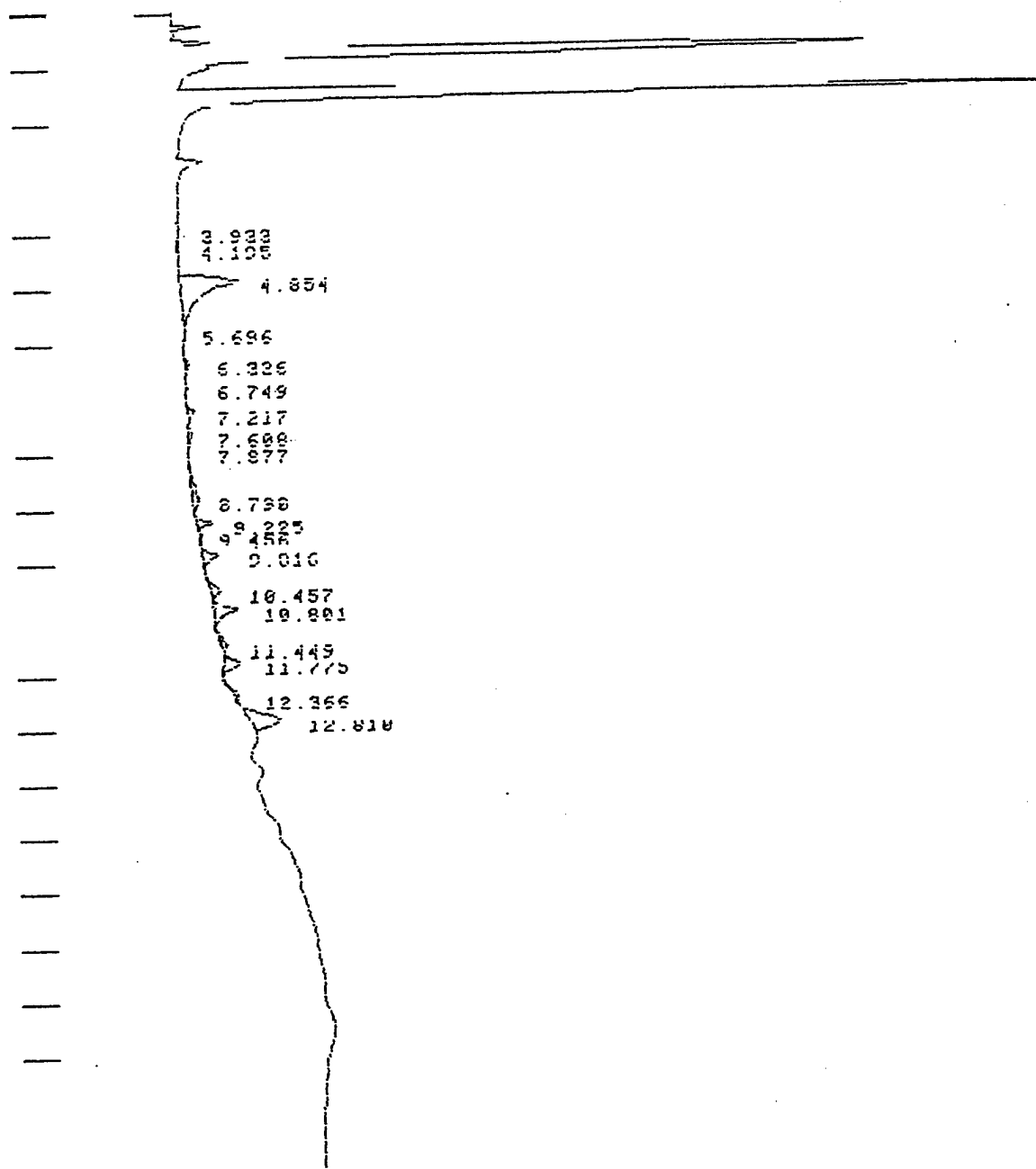
DIVISOR: 1.00000

ANT STD: 1.00000

MULTIPLIER: 1.00000



CHART SPEED 0.8 CM/MIN  
ATTEN: 8 ZERO: 5% 1 MIN/TICK



RECALCULATE ON FILE: TPHC137

CHANNEL: 1B - 1 TITLE: TPHC BY MODIFIED 8015

17:18 7 MAR 84

SAMPLE: 02-572

METHOD: TPHC

CALCULATION: AX - ANALYS - OP

PEAK NO	PEAK NAME	RESULT AREA%	TIME (MIN)	AREA COUNTS	SEP CODE
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TOTALS: 0.0000 0

TOTAL UNIDENT AREA/HT: 24446



7PP  
CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (}\mu\text{L)}}{\text{Volume Inj (}\mu\text{L)}}$$

Control Numbers

531 - MS	$\frac{6150120}{7100219} = 0.8662$	} 91.33 %
- MSD	$\frac{6818429}{7100219} = 0.9603$	

541 - MS	$\frac{6780890}{7100219} = \cancel{0.8043} 0.9550$	} 87.97 %
- MSD	$\frac{5710393}{7100219} = 0.8043$	

557 - MS	$\frac{4508078}{7100219} = 0.6349$	} 74.32 %
- MSD	$\frac{6045594}{7100219} = 0.8515$	



T/FH  
CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (\mu L)}}{\text{Volume Inj (\mu L)}}$$

Control Numbers

50 ppm STD  $\rightarrow$  5002 CTS

TOTAL AREA  
↓

$$02-531 \quad \frac{1576}{5002} \times \frac{(50 \text{ ng}/\mu\text{L})(2 \mu\text{L})}{30.28 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 2.60 \text{ ppm}$$

$$02-532 \quad \frac{5694}{5002} \times \frac{100 \text{ ng}}{30.03 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 9.48 \text{ ppm}$$

$$02-533 \quad \frac{13067}{5002} \times \frac{100 \text{ ng}}{30.31 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 21.55 \text{ ppm}$$

$$02-534 \quad \frac{7007}{5002} \times \frac{100 \text{ ng}}{30.15 \text{ g}} \times \frac{5000}{2 \mu\text{L}} = 11.62 \text{ ppm}$$

$$02-535 \quad \frac{5894}{5002} \times \frac{100 \text{ ng}}{30.45 \text{ g}} \times \frac{5000}{2 \mu\text{L}} = 9.67 \text{ ppm}$$

$$02-536 \quad \frac{3346}{5002} \times \frac{100 \text{ ng}}{\frac{30.45}{30.16} \text{ g}} \times \frac{5000}{2 \mu\text{L}} = 5.54 \text{ ppm}$$



# CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (\mu L)}}{\text{Volume Inj (\mu L)}}$$

## Control Numbers

$$02-537 \quad \frac{3221}{5002} \times \frac{100 \text{ ng}}{30.07 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 5.35 \text{ ppm}$$

$$02-538 \quad \frac{2399}{5002} \times \frac{100 \text{ ng}}{30.16 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 3.98 \text{ ppm}$$

$$02-539 \quad \frac{2097}{5002} \times \frac{100 \text{ ng}}{30.34 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 3.45 \text{ ppm}$$

$$02-540 \quad \frac{3108}{5002} \times \frac{100 \text{ ng}}{30.24 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 5.14 \text{ ppm}$$

02-541

MATRIX INTERFERENCE  
(SEE CHROMATOGRAM)

< 10 ppm

$$02-542 \quad \frac{2728}{5002} \times \frac{100 \text{ ng}}{30.26 \text{ g}} \times \frac{5000}{2 \mu\text{L}} = 4.51 \text{ ppm}$$

$$02-543 \quad \frac{2245}{5002} \times \frac{100 \text{ ng}}{30.66 \text{ g}} \times \frac{5000}{2 \mu\text{L}} = 3.66 \text{ ppm}$$

$$02-544 \quad \frac{3350}{5002} \times \frac{100 \text{ ng}}{30.12 \text{ g}} \times \frac{5000}{2 \mu\text{L}} = 5.56 \text{ ppm}$$



# CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (\mu L)}}{\text{Volume Inj (\mu L)}}$$

## Control Numbers

$$02-551 \quad \frac{2243}{5002} \times \frac{100 \text{ ng}}{30.07 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 3.73 \text{ ppm}$$

$$02-552 \quad \frac{4127}{5002} \times \frac{100}{30.65} \times \frac{5000}{2} = 6.73 \text{ ppm}$$

$$02-553 \quad \frac{1488}{5002} \times \frac{100}{30.38} \times \frac{5000}{2} = 2.45 \text{ ppm}$$

$$02-554 \quad \frac{2944}{5002} \times \frac{100}{30.03} \times \frac{5000}{2} = 4.90 \text{ ppm}$$

$$02-555 \quad \text{MATRIX INTERFERENCE} \quad < 100 \text{ ppm} \\ (\text{SEE CHROMATOGRAM})$$

$$02-556 \quad \frac{2514}{5002} \times \frac{100}{30.20} \times \frac{5000}{2} = 4.16 \text{ ppm}$$

$$02-557 \quad \text{MATRIX INTERFERENCE} \quad < 100 \text{ ppm} \\ (\text{SEE CHROMATOGRAM})$$

$$02-558 \quad \frac{2062}{5002} \times \frac{100}{30.13} \times \frac{5000}{2} = 3.42 \text{ ppm}$$

$$02-559 \quad \frac{1976}{5002} \times \frac{100}{30.40} \times \frac{5000}{2} = 3.25 \text{ ppm}$$



# CALCULATIONS

$$\frac{\text{Area Counts of Sample}}{\text{Area Counts of Std}} \times \frac{\text{Amount of Std Injected (ng)}}{\text{Initial Vol / Wt (g or ml)}} \times \frac{\text{Final Volume (\mu L)}}{\text{Volume Inj (\mu L)}}$$

## Control Numbers

$$02-560 \quad \frac{2499}{5002} \times \frac{100 \text{ ng}}{30.08 \text{ g}} \times \frac{5000 \mu\text{L}}{2 \mu\text{L}} = 4.15 \text{ ppm}$$

$$02-561 \quad \frac{5104}{5002} \times \frac{100}{30.60} \times \frac{5000}{2} = 8.34 \text{ ppm}$$

$$02-562 \quad \text{SEE CHROMATOGRAM} \quad < 10 \text{ ppm}$$

$$02-563 \quad \text{SEE CHROMATOGRAM} \quad < 10 \text{ ppm}$$

$$02-572 \quad \frac{24446}{5002} \times \frac{100}{940 \text{ ml}} \times \frac{5000}{2} = 1.30 \text{ ppm}$$



# Organic Extraction Log Worksheet

## Total Petroleum Hydrocarbons

Date: 02-28-94

Time: ~~12:30~~ 16:30

Analyst: ~~SS~~ NGS

Method: 8015 (DIESEL ONLY)

Control Number	Matrix	Sample Volume/Weight	Spike	Extract Volume	Comments
BLANK		80 ml		5.0 ml	
02-531	SOIL	30.28 g		5.0 ml	
531 MS	SOIL	30.23 g	30 ppm	10.0 ml	300 µl DIESEL FUEL + SOIL
531 MSD	SOIL	30.17 g	30 ppm	10.0 ml	300 µl DIESEL FUEL + SOIL
02-532	SOIL	30.03 g		5.0 ml	
02-533	SOIL	30.31 g		5.0 ml	
02-534	SOIL	30.15 g		5.0 ml	
02-535	SOIL	30.45 g		5.0 ml	
02-536	SOIL	30.16 g		5.0 ml	
02-537	SOIL	30.07 g		5.0 ml	
02-538	SOIL	30.16 g		5.0 ml	
02-539	SOIL	30.34 g		5.0 ml	
02-540	SOIL	30.24 g		5.0 ml	TUMBLED 02-24-94
02-541	SOIL	30.50 g		5.0 ml	
541 MS	SOIL	30.20 g	30 ppm	10.0 ml	300 µl DIESEL FUEL + SOIL
541 MSD	SOIL	30.21 g	30 ppm	10.0 ml	300 µl DIESEL FUEL + SOIL
02-542	SOIL	30.26 g		5.0 ml	
02-543	SOIL	30.66 g		5.0 ml	
02-544	SOIL	30.12 g		5.0 ml	
02-551	SOIL	30.07 g		5.0 ml	
02-552	SOIL	30.65 g		5.0 ml	
02-553	SOIL	30.38 g		5.0 ml	
02-554	SOIL	30.03 g		5.0 ml	
02-555	SOIL	30.41 g		5.0 ml	
02-556	SOIL	30.20 g		5.0 ml	



## Organic Extraction Log Worksheet

### Total Petroleum Hydrocarbons

Date: ~~02-28-94~~ 03-01-94

Time: ~~12:30~~ (cont'd)

Analyst: WES

Method: 8015 (DIESEL ONLY)

Control Number	Matrix	Sample Volume/Weight	Spike	Extract Volume	Comments
02-557	Soil	30.18 g		5.0 ml	
557 MS	Soil	30.09 g	30 ppm	10.0 ml	Soil + 30 µL Diesel Fuel
557 MSO	Soil	30.29 g	30 ppm	10.0 ml	Soil + 30 µL Diesel Fuel
02-558	Soil	30.13 g		5.0 ml	
02-559	Soil	30.40 g		5.0 ml	
02-560	Soil	30.08 g		5.0 ml	
02-561	Soil	30.60 g		5.0 ml	
02-562	Soil	30.60 g		5.0 ml	
02-563	Soil	30.26 g		5.0 ml	
BLANK		80 ml			
02-572	Water	940 ml		5.0 ml	
02-558	Soil	30.08		5.0 ml	
02-559	↓	30.27		↓	
02-562	↓	30.08		↓	
02-563	↓	30.18		↓	

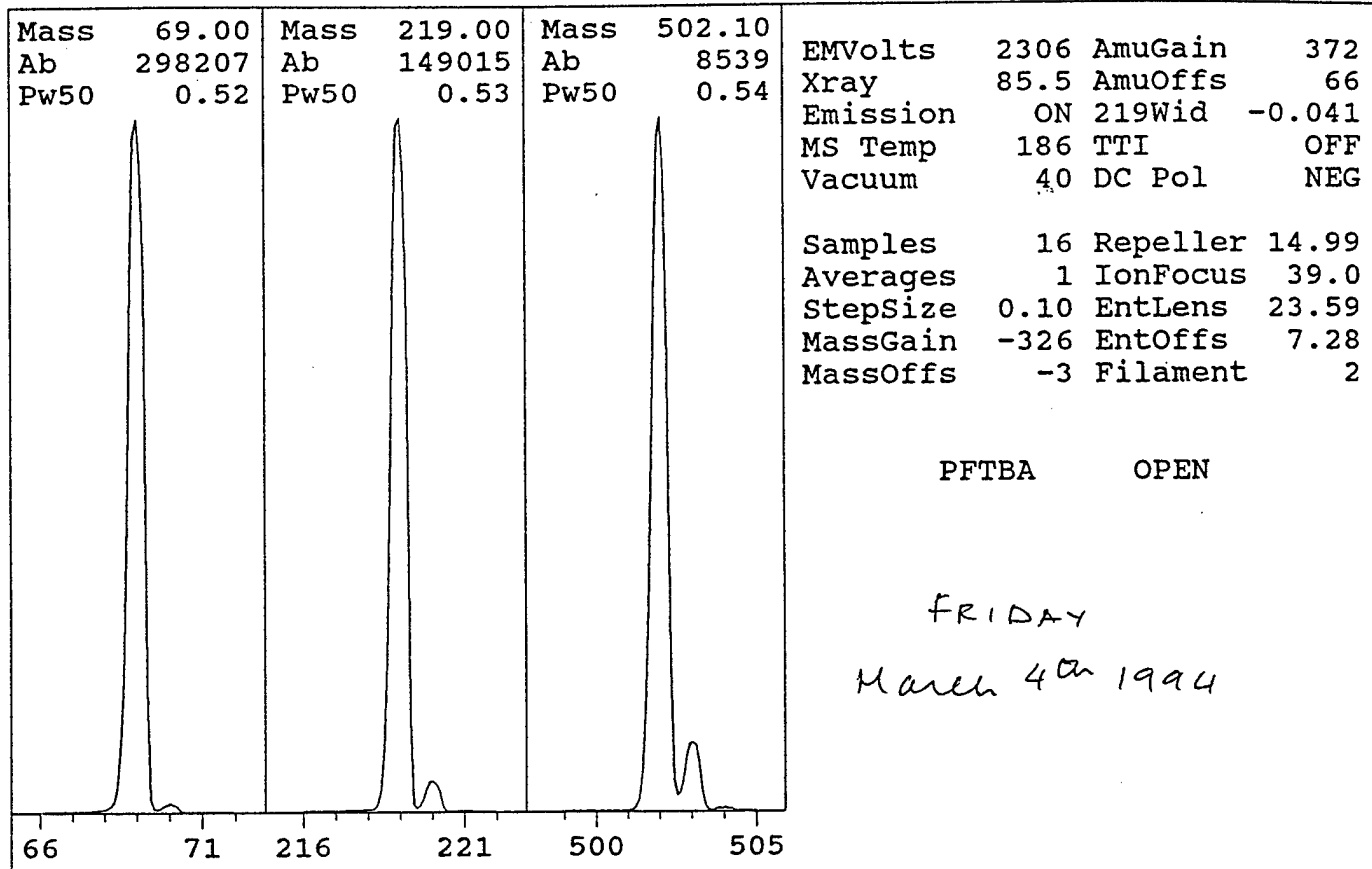


# HP5971 Standard Spectra AutoTune

Instrument: GC/MS

Fri Mar 04 14:07:16 1994

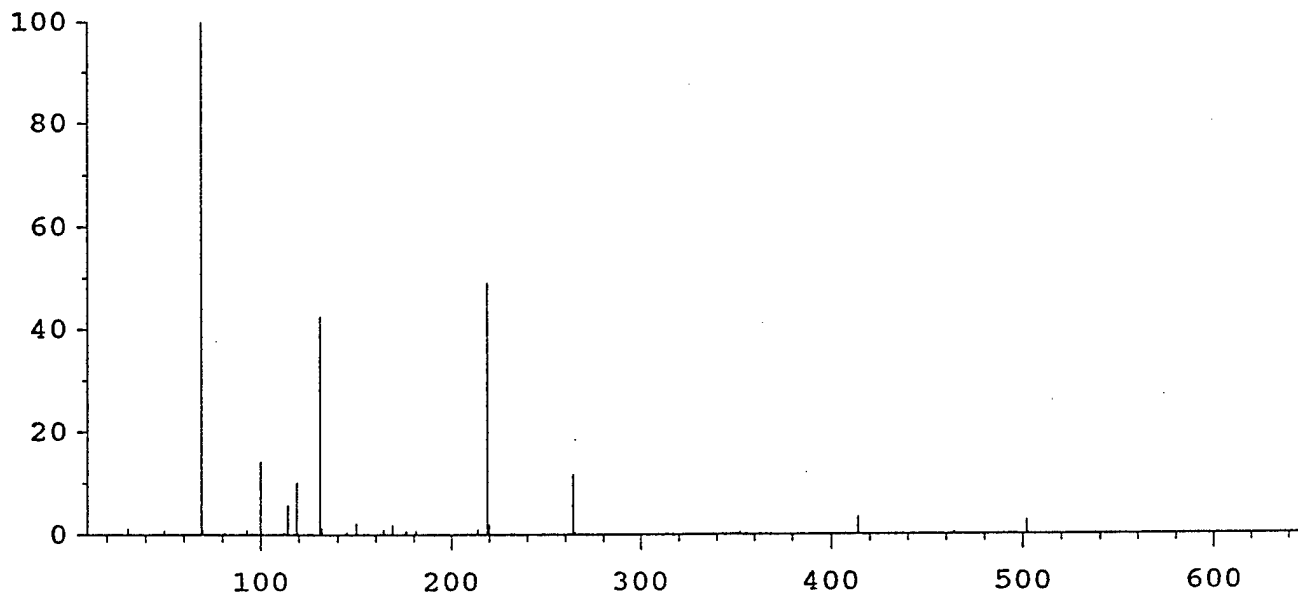
C:\HPCHEM\1\5971\ATUNE.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10

71 peaks Base: 69.00 Abundance: 261824

93, 35.



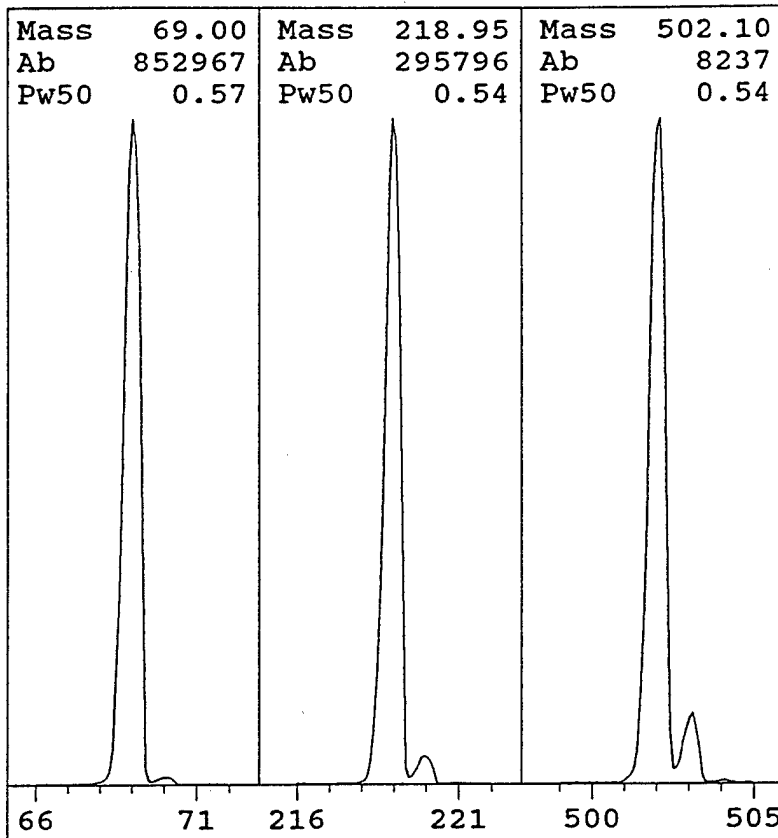
Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	261824	100.00	70.00	2887	1.10
218.95	128368	49.03	219.95	5458	4.25
502.05	7538	2.88	503.05	762	10.11



# HP5971 DFTPP Dynamic Target Tune

Fri Mar 04 14:16:07 1994

C:\HPCHEM\1\5971\DFTPP.U

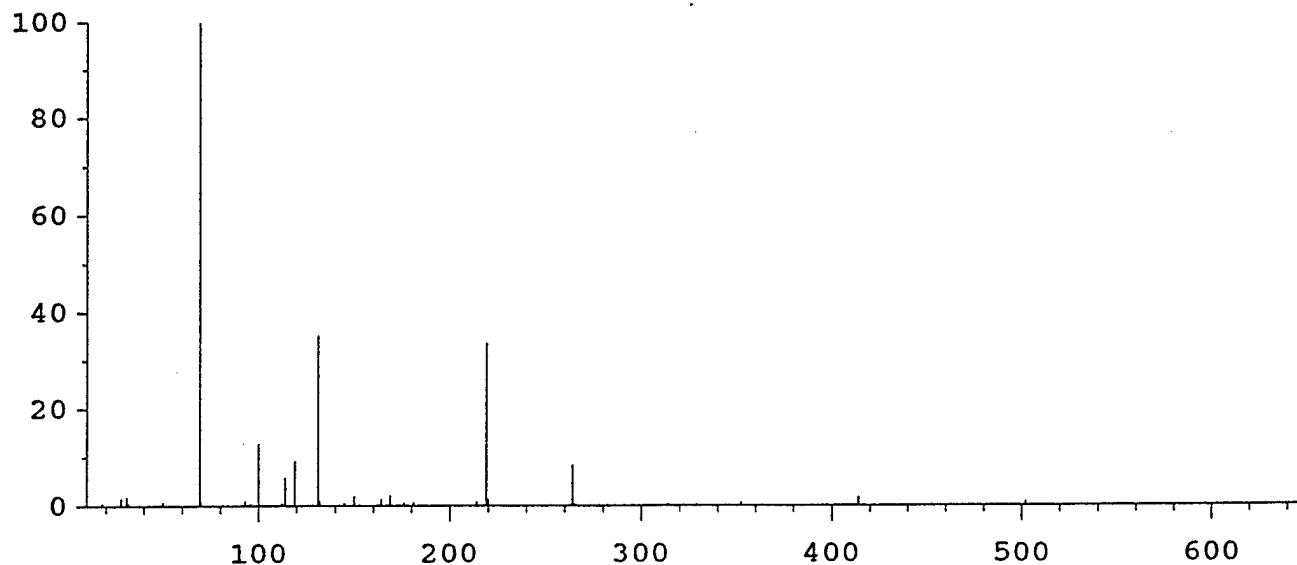


EMVolts 2494 AmuGain 376  
Xray 89.8 AmuOffs 68  
Emission ON 219Wid 0.010  
MS Temp 185 TTI OFF  
Vacuum 40 DC Pol NEG

Samples 16 Repeller 18.78  
Averages 1 IonFocus 40.0  
StepSize 0.10 EntLens 0.00  
MassGain -338 EntOffs VAR  
MassOffs -3 Filament 2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
110 peaks Base: 69.00 Abundance: 724992



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	724992	100.00	70.00	7989	1.10
219.00	244672	33.75	220.00	10616	4.34
502.05	6936	0.96	503.05	715	10.31

TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	17.8	17.1	21.3	18.8
TARGET ABUND(%)	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%)	100.0	35.3	33.7	1.0

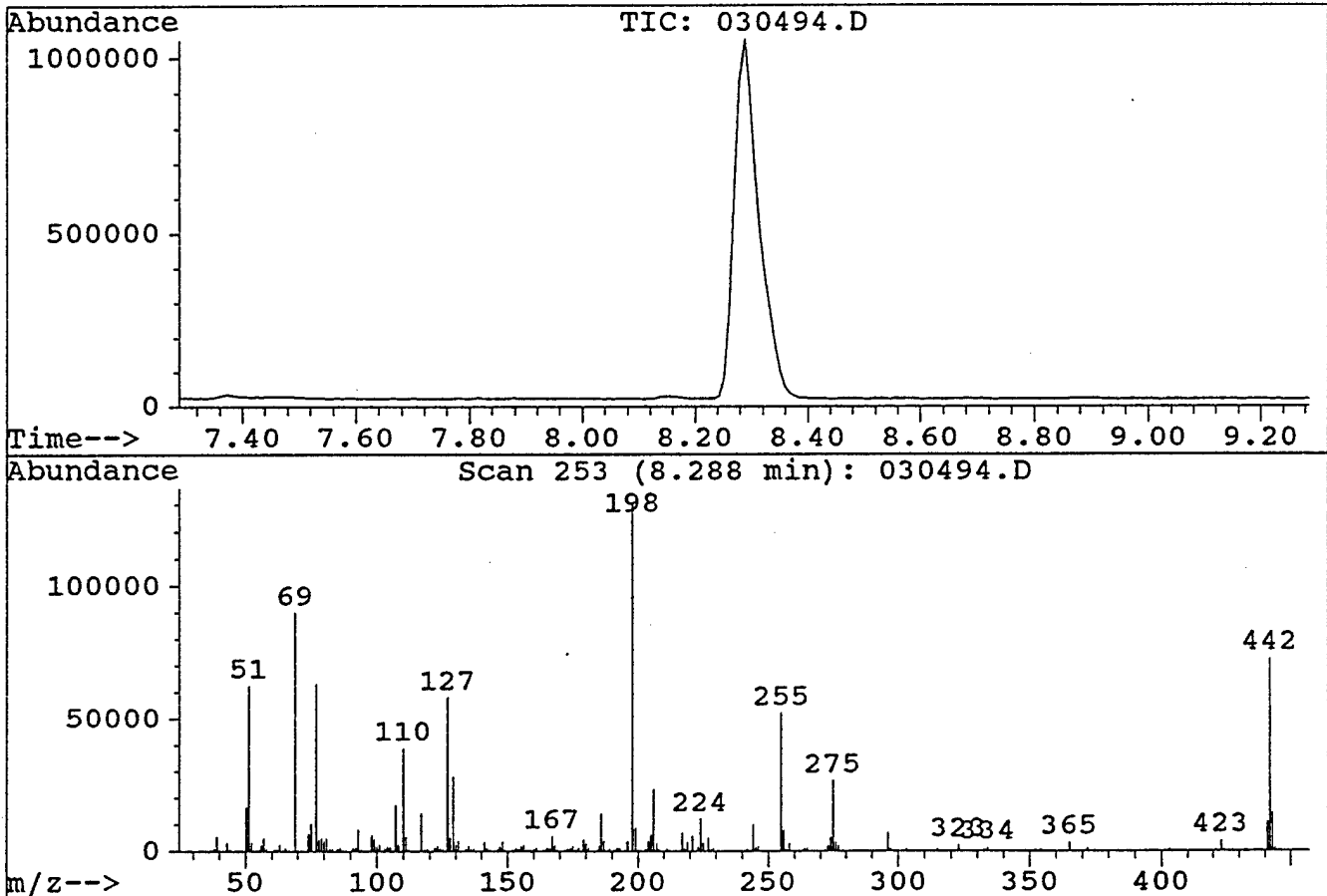


DFTPP

Data File : C:\HPCHEM\1\DATA\030494.D  
 Acq Time : 4 Mar 94 2:27 pm  
 Sample : DFTPP TUNE EVALUATION  
 Misc : 1uL INJECTION (50ng)

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M  
 Title :



Peak Apex is scan: 253

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	48.2	62544	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	69.3	89984	PASS
70	69	0	2	0.6	556	PASS
127	198	40	60	44.8	58128	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	129768	PASS
199	198	5	9	6.9	8898	PASS
275	198	10	30	20.5	26624	PASS
365	198	1	100	2.5	3200	PASS
441	443	0	100	74.3	10644	PASS
442	198	40	100	56.1	72816	PASS
443	442	17	23	19.7	14320	PASS



## SEQUENCE.LOG

Simulate Run Sequence Fri Mar 04 14:54:25 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0304SV.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\030494\

Method Path: C:\HPCHEM\1\METHODS\

Line	Type	Vial	DataFile	Method	Sample Name
1)	Sample	1	0304HJV1	8270	SPCC 200PPM
2)	Sample	2	0304HJV2	8270	CCC B/N 100PPM
3)	Sample	3	0304HJV3	8270	CCC A 100PPM
4)	Sample	4	0304HJV4	8270	9402010531
5)	Sample	5	0304HJV5	8270	9402010532
6)	Sample	6	0304HJV6	8270	9402010533
7)	Sample	7	0304HJV7	8270	9402010534
8)	Sample	8	0304HJV8	8270	9402010535

Bytes Needed: 400000 Space on drive C: 27410432  
Sequence Verification Done!



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV1.D  
 Acq Time : 4 Mar 94 3:06 pm  
 Sample : SPCC 200PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 4 16:14 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	342601	40.00	ng	0.13
21) Naphthalene-d8	14.76	136	1198676	40.00	ng	0.11
40) Acenaphthene-d10	20.30	164	653432	40.00	ng	0.13
67) Phenanthrene-d10	24.92	188	764078	40.00	ng	0.08
82) Chrysene-d12	33.36	240	95625	40.00	ng	0.22
92) Perylene-d12	38.56	264	36786	40.00	ng	0.50

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.88	99	3509	0.31	ng	0.76%
23) Nitrobenzene-d5	12.42	82	2274	0.23	ng	0.56%
45) 2-Fluorobiphenyl	18.35	172	394	0.02	ng	0.04%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
20) N-Nitrosodi-n-propylamine	12.42	70	1365589	223.72	ng	m 92
42) Hexachlorocyclopentadiene	17.71	237	192409	102.43	ng	m 97
51) 2,6-Dinitrotoluene	20.30	165	83974	15.75	ng	# 32
54) 2,4-Dinitrophenol	24.92	184	104177	43.22	ng	m 0
55) 4-Nitrophenol	23.11	139	210466	38.53	ng	m 0

Calculation of response factor:-

$$(1) \frac{1365589 \times 40}{342601 \times 200} = 0.80 \checkmark$$

$$(2) \text{Hexachlorocyclopentadiene} = \frac{192409 \times 40}{1198676 \times 200} = 0.059 \checkmark$$

$$(3) 2,4\text{-Dinitrophenol} = \frac{104177 \times 40}{653432 \times 200} = 0.032$$

$$(4) 4\text{-Nitrophenol} = \frac{210466 \times 40}{653432 \times 200} = 0.064 \checkmark$$

SPCC's cleared = 3

(#) = qualifier out of range (m) = manual integration

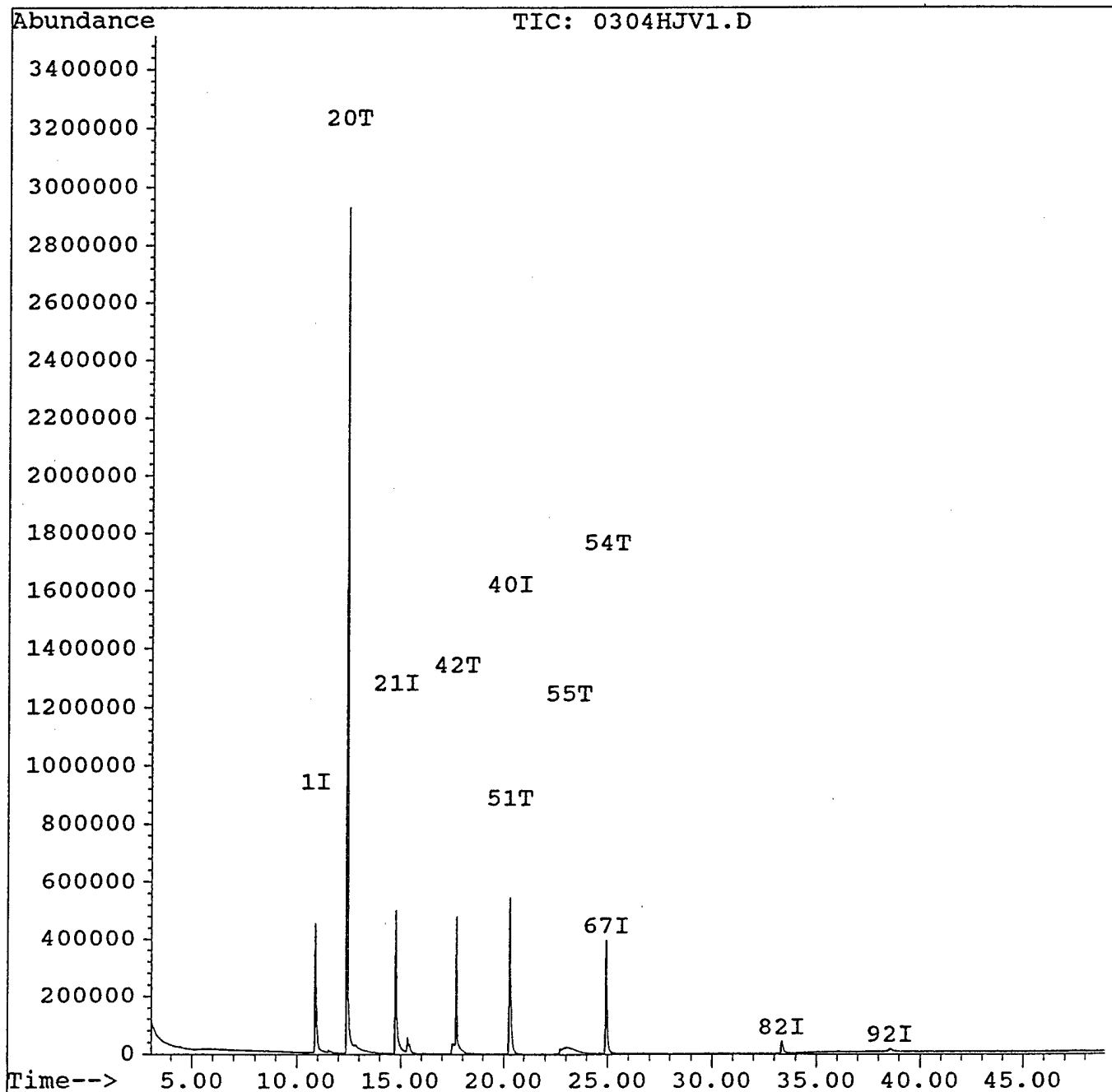


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV1.D  
Acq Time : 4 Mar 94 3:06 pm  
Sample : SPCC 200PPM  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 4 16:14 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV2.D  
 Acq Time : 4 Mar 94 4:05 pm  
 Sample : CCC B/N 100PPM  
 Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
 Quant Time: Mar 4 17:24 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
 Title : Volatiles  
 Last Update : Tue Nov 30 16:13:40 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	440963	40.00	ng	0.12
21) Naphthalene-d8	14.76	136	1597362	40.00	ng	0.11
40) Acenaphthene-d10	20.30	164	877402	40.00	ng	0.13
67) Phenanthrene-d10	24.94	188	1048449	40.00	ng	0.09
82) Chrysene-d12	33.33	240	155572	40.00	ng	0.19
92) Perylene-d12	38.50	264	51494	40.00	ng	0.44

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.93	99	10115	0.69	ng	1.71%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.36	172	597	0.02	ng	0.05%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
13) 1,4-Dichlorobenzene	10.93	146	1567511	119.96	ng	100
36) Hexachlorobutadiene	15.42	225	604955	122.57	ng	99
53) Acenaphthene	20.39	154	2174969	83.04	ng	99
69) Diphenylamine + N-Nitrosod	22.61	169	1263257	43.50	ng m	97
81) Fluoranthene	28.75	202	1822635	72.94	ng m	98
93) Di-n-octylphthalate	35.72	149	904173	128.87	ng m	89
97) Benzo(a)pyrene	38.22	252	215085	89.75	ng m	96

Calculation of response factor

% RPD

1,4 Dichlorobenzene	$\frac{1567511 \times 40}{440963 \times 100} = 1.4219$	$\frac{1.521 - 1.422 \times 100}{1.521} = 6.50\%$
Hexa chloro butadiene	$\frac{604955 \times 40}{1597362 \times 100} = 0.1515$	$\frac{0.143 - 0.152 \times 100}{0.143} = 6.29\%$
Acenaphthene	$\frac{2174969 \times 40}{877402 \times 100} = 0.9915$	$\frac{1.067 - 0.9915 \times 100}{1.067} = 7.08\%$
Diphenylamine + N Nitro	$\frac{1263257 \times 40}{1048449 \times 100} = 0.4820$	$\frac{1.360 - 0.482 \times 100}{1.360} = 64.66\%$
Fluoranthene	$\frac{1822635 \times 40}{1048449 \times 100} = 0.6954$	$\frac{1.026 - 0.7054 \times 100}{1.026} = 31.2\%$
Di-n-octylphthalate	$\frac{904173 \times 40}{51494 \times 100} = 7.024$	$\frac{5.271 - 7.024 \times 100}{5.271} = 33.26\%$
Benzo(a)pyrene	$\frac{215085 \times 40}{51494 \times 100} = 1.6208$	$\frac{1.947 - 1.680 \times 100}{1.947} = 13.71\%$

(#) = qualifier out of range (m) = manual integration

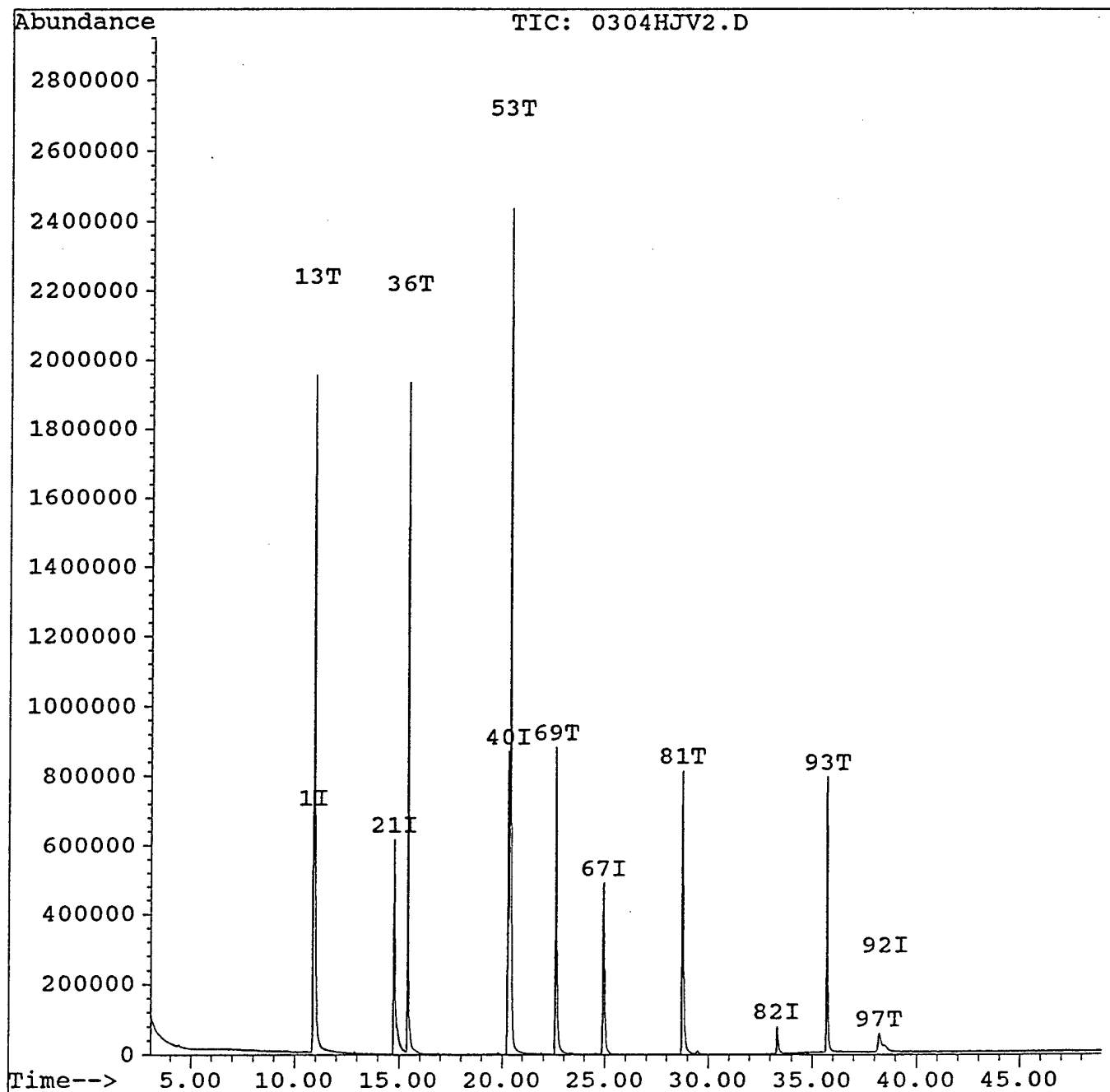


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV2.D  
Acq Time : 4 Mar 94 4:05 pm  
Sample : CCC B/N 100PPM  
Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
Quant Time: Mar 4 17:24 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8240.M  
Title : Volatiles  
Last Update : Tue Nov 30 16:13:40 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV3.D  
 Acq Time : 4 Mar 94 5:05 pm  
 Sample : CCC A 100PPM  
 Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:06 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	645717	40.00	ng	0.12
21) Naphthalene-d8	14.75	136	2428706	40.00	ng	0.10
40) Acenaphthene-d10	20.28	164	1277752	40.00	ng	0.11
67) Phenanthrene-d10	24.94	188	1455741	40.00	ng	0.10
82) Chrysene-d12	33.34	240	153772	40.00	ng	0.21
92) Perylene-d12	38.57	264	45271	40.00	ng	0.51

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.88	99	7509	0.35	ng	0.87%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.34	172	1201	0.03	ng	0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds						Qvalue
9) Phenol	11.26	94	2326675	120.78	ng	m 0
27) 2-Nitrophenol	13.74	139	1083538	98.48	ng	# 88
30) 2,4-Dichlorophenol	15.20	162	1484532	102.64	ng	m 0
38) 4-Chloro-3-methylphenol	17.63	107	1630269	109.70	ng	m 98
43) 2,4,6-Trichlorophenol	18.34	196	886461	92.23	ng	m 0

Calculation of response factor

% RPD

1) Phenol	$\frac{2326675 \times 40}{645717 \times 100} = 1.4413$	$\frac{1.585 - 1.442 \times 100}{1.585} = 9.02\%$
2) 2-Nitrophenol	$\frac{1083538 \times 40}{2428706 \times 100} = 0.1785$	$\frac{0.212 - 0.180 \times 100}{0.212} = 15.09\%$
3) 2,4-Dichlorophenol	$\frac{1484532 \times 40}{2428706 \times 100} = 0.2445$	$\frac{0.301 - 0.245 \times 100}{0.301} = 25.0\%$
4) 4-Chloro 3-methylphenol	$\frac{1630269 \times 40}{2428706 \times 100} = 0.2685$	$\frac{0.322 - 0.270 \times 100}{0.322} = 16.15\%$
5) 2,4,6 Trichlorophenol	$\frac{886461 \times 40}{1277752 \times 100} = 0.2775$	$\frac{0.293 - 0.280 \times 100}{0.293} = 4.44\%$

(#) = qualifier out of range (m) = manual integration

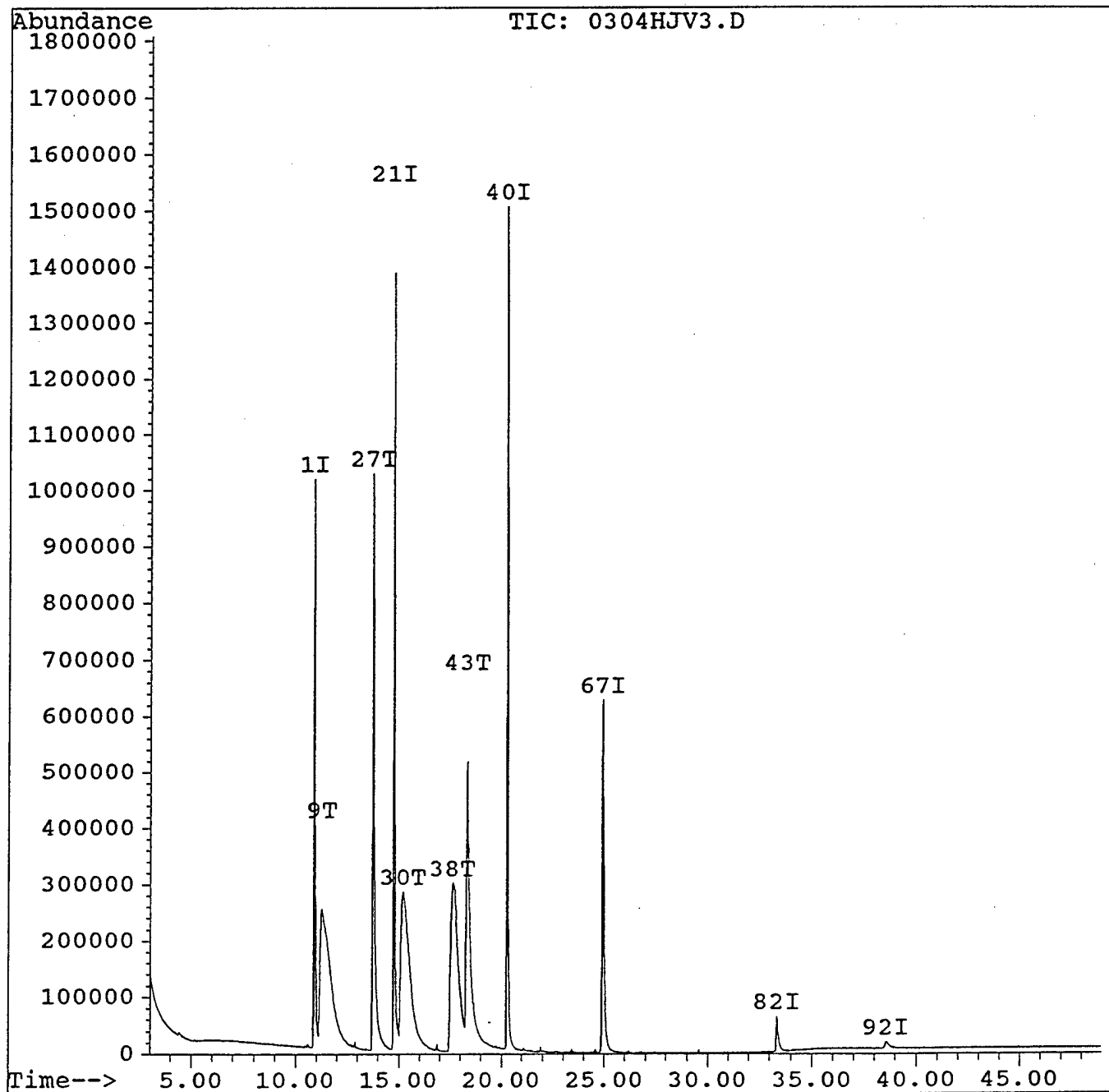


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV3.D  
Acq Time : 4 Mar 94 5:05 pm  
Sample : CCC A 100PPM  
Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:06 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





sample

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

sample

sample

sample

sample

sample

sample

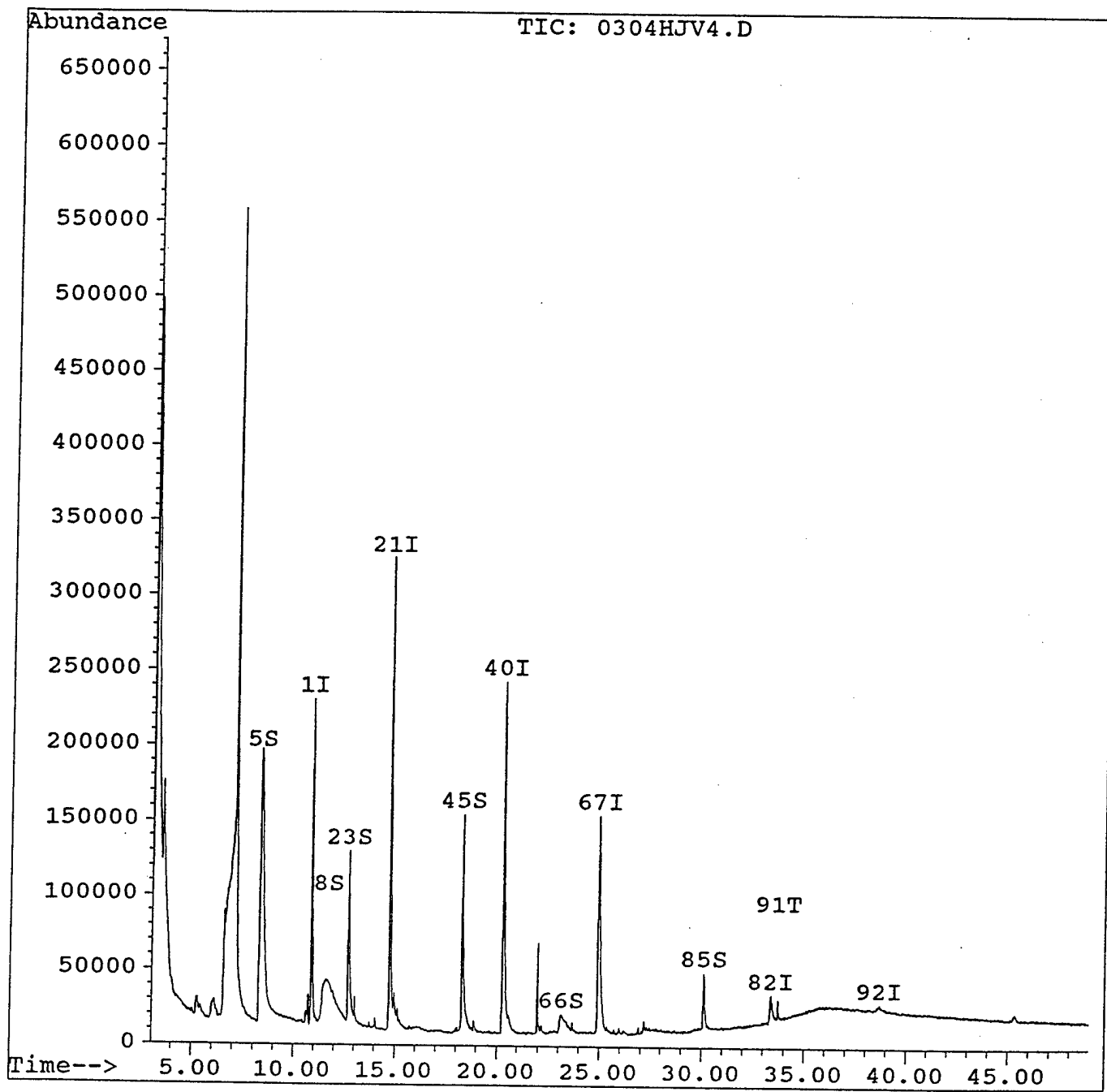


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV4.D  
Acq Time : 4 Mar 94 6:04 pm  
Sample : 9402010531  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:10 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV5.D  
 Acq Time : 4 Mar 94 7:03 pm  
 Sample : 9402010532  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:15 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	122736	40.00	ng	0.12
21) Naphthalene-d8	14.74	136	615858	40.00	ng	0.09
40) Acenaphthene-d10	20.30	164	251292	40.00	ng	0.13
67) Phenanthrene-d10	24.96	188	380042	40.00	ng	0.12
82) Chrysene-d12	33.41	240	39051	40.00	ng	0.28
92) Perylene-d12	38.67	264	5313	40.00	ng	0.61

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.46	112	164453	52.85	ng	132.13%
8) Phenol-d5	11.59	99	218778	53.24	ng	133.11%
23) Nitrobenzene-d5	12.71	82	232106	44.76	ng	111.91%
45) 2-Fluorobiphenyl	18.30	172	222721	24.45	ng	61.13%
66) 2,4,6-Tribromophenol	23.16	330	33374	35.95	ng	89.88%
85) Terphenyl-d14	30.13	244	51348	45.89	ng	114.73%

Target Compounds Qvalue

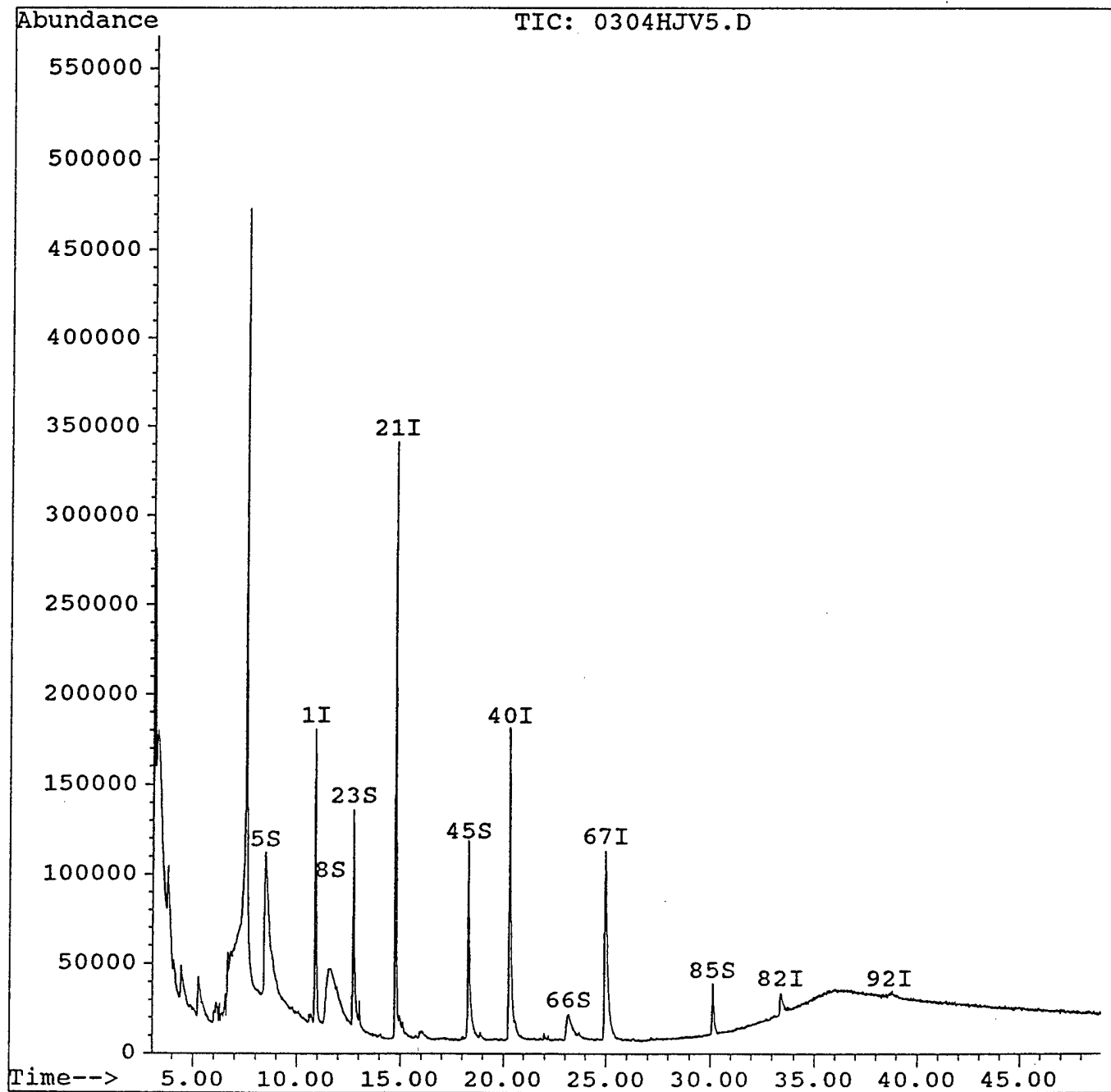


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV5.D  
Acq Time : 4 Mar 94 7:03 pm  
Sample : 9402010532  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:15 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV6.D  
 Acq Time : 4 Mar 94 8:01 pm  
 Sample : 9402010533  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:22 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	415899	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1534913	40.00	ng	0.09
40) Acenaphthene-d10	20.27	164	810528	40.00	ng	0.10
67) Phenanthrene-d10	24.92	188	1015407	40.00	ng	0.08
82) Chrysene-d12	33.33	240	132410	40.00	ng	0.20
92) Perylene-d12	38.54	264	37177	40.00	ng	0.48

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.29	112	354059	33.58	ng	83.95%
8) Phenol-d5	11.58	99	457630	32.87	ng	82.17%
23) Nitrobenzene-d5	12.70	82	467258	36.16	ng	90.39%
45) 2-Fluorobiphenyl	18.27	172	935061	31.83	ng	79.57%
66) 2,4,6-Tribromophenol	23.28	330	38129	12.74	ng	31.84%
85) Terphenyl-d14	30.08	244	276273	72.82	ng	182.05%

Target Compounds						Qvalue
84) Pyrene	29.45	202	54027	8.97	ng	m 100
91) Bis(2-ethylhexyl) phthalat	33.73	149	87185	18.28	ng	m 96

wt. of sample = 30.46 g % solid = 89.85%

Actual conc.

$$(1) \text{ Bis(2-ethylhexyl) phthalate} = \frac{18.28 \times 1000}{30.46 \times 0.8985} = 667.93 \text{ } \mu\text{g/g}$$

$$(2) \text{ Pyrene} = \frac{8.97 \times 1000}{30.46 \times 0.8985} = 327.75 \text{ } \mu\text{g/g}$$

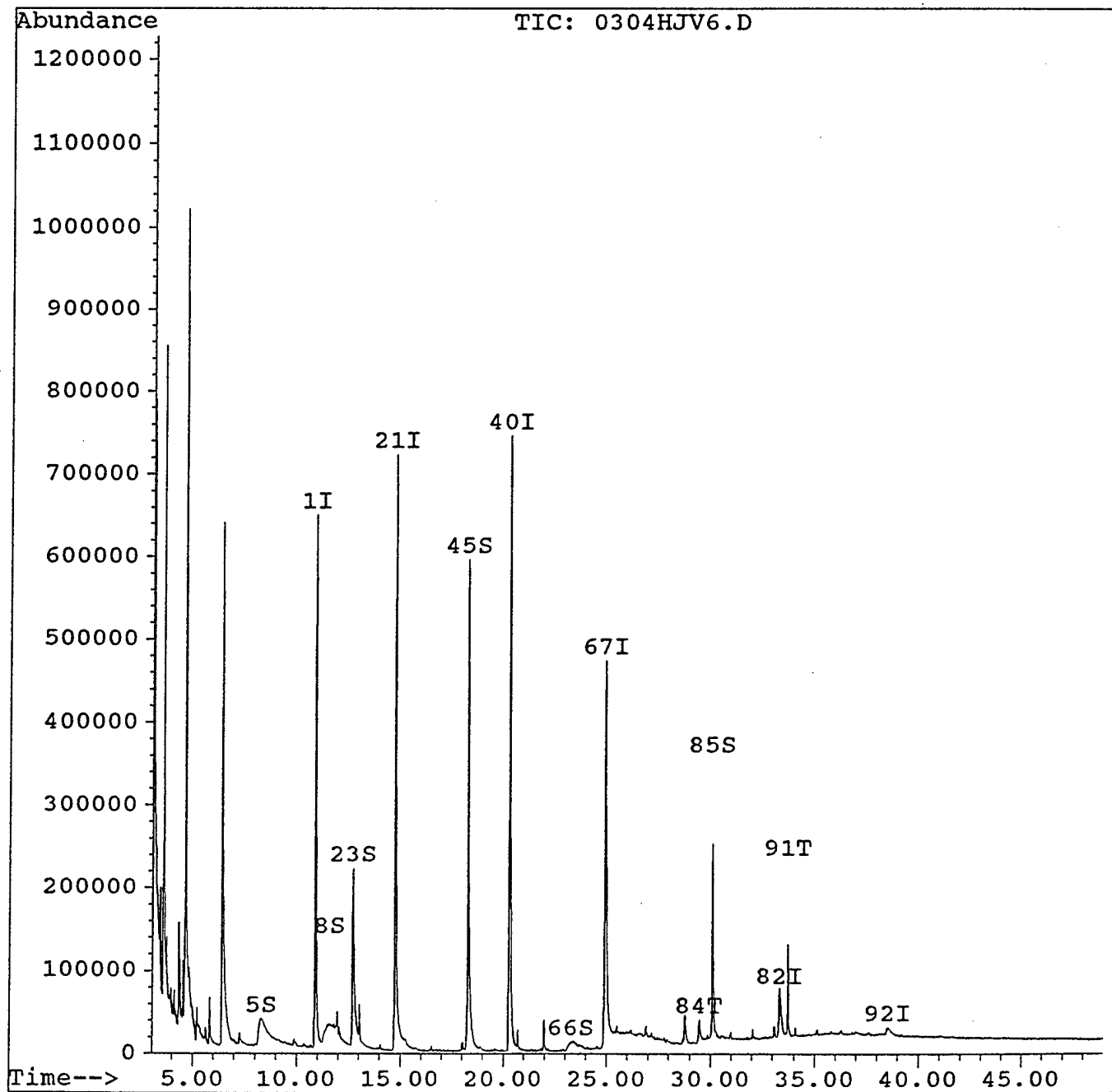


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV6.D  
Acq Time : 4 Mar 94 8:01 pm  
Sample : 9402010533  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:22 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV7.D  
 Acq Time : 4 Mar 94 8:59 pm  
 Sample : 9402010534  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:34 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	416902	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1510498	40.00	ng	0.09
40) Acenaphthene-d10	20.28	164	808191	40.00	ng	0.11
67) Phenanthrene-d10	24.92	188	1004154	40.00	ng	0.08
82) Chrysene-d12	33.34	240	142510	40.00	ng	0.21
92) Perylene-d12	38.56	264	35346	40.00	ng	0.51

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.29	112	449310	42.51	ng	106.28%
8) Phenol-d5	11.70	99	556390	39.86	ng	99.66%
23) Nitrobenzene-d5	12.71	82	469104	36.89	ng	92.22%
45) 2-Fluorobiphenyl	18.28	172	864849	29.52	ng	73.81%
66) 2,4,6-Tribromophenol	23.33	330	51601	17.28	ng	43.21%
85) Terphenyl-d14	30.10	244	293184	71.80	ng	179.50%

Target Compounds						Qvalue
91) Bis(2-ethylhexyl) phthalat	33.72	149	35338	6.88	ng	93

wt. of sample = 30.14 g      % solid = 85.75%

$$\text{Actual conc.} = \frac{6.88 \times 1000}{30.14 \times 0.8575} = 266.20 \text{ ppb.}$$

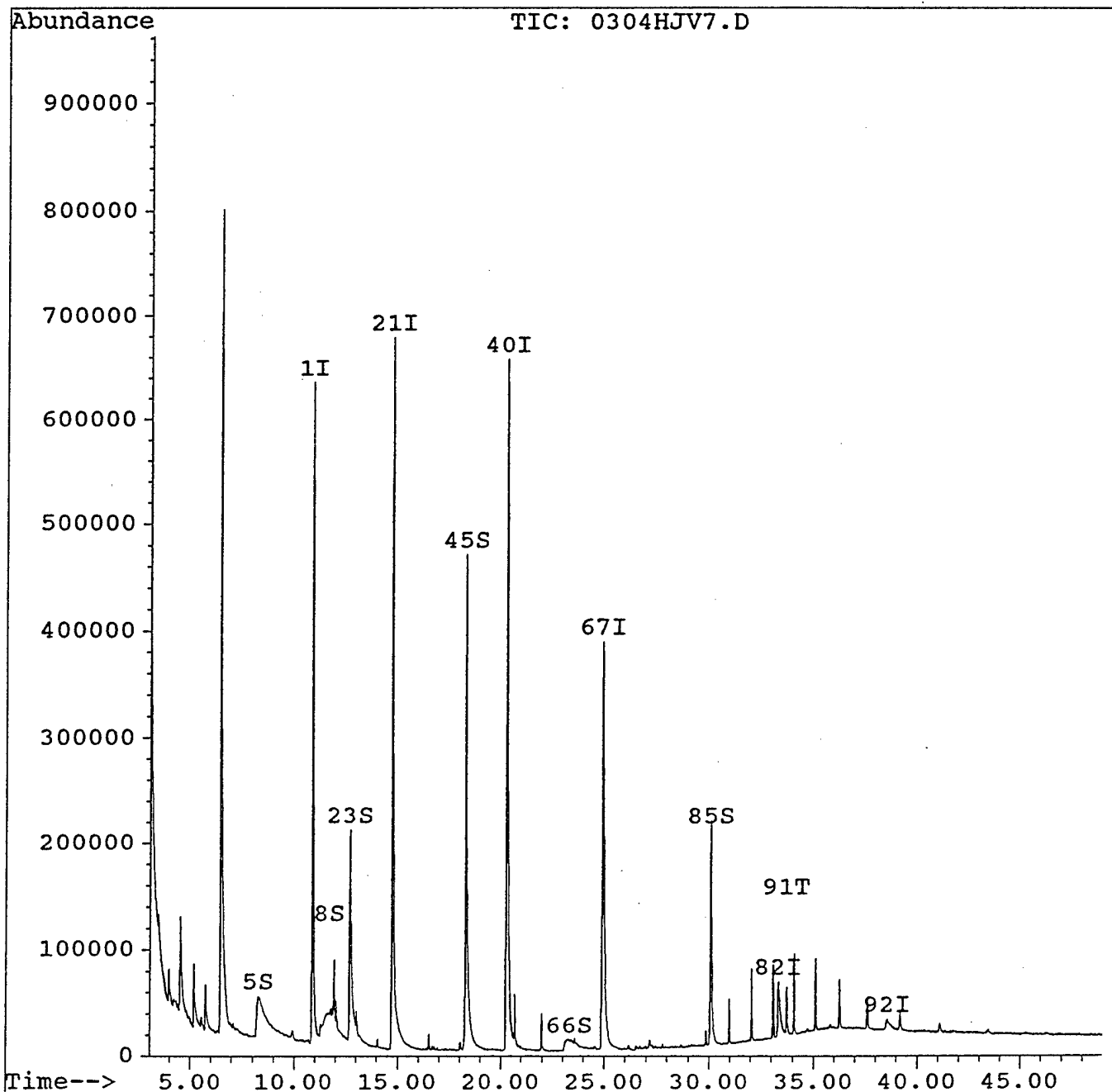


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV7.D  
Acq Time : 4 Mar 94 8:59 pm  
Sample : 9402010534  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:34 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





Information from Data File:

File: C:\HPCHEM\1\DATA\030494\0304HJV7.D  
 Operator: HJV  
 Date Acquired: 4 Mar 94 8:59 pm  
 Method File: 8270  
 Sample Name: 9402010534  
 Misc Info: 1uL INJECTION, 10uL INTSTD. ADDED  
 Vial Number: 7

Search Libraries: C:\DATABASE\NBS54K.L Minimum Quality: 0

Unknown Spectrum: Apex  
 Integration Events: AutoIntegrate

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
1	3.46	3.80	C:\DATABASE\NBS54K.L 3-Oxetanol, 2,2,3-trimethyl- Pentanoic acid, 2,2-dimethyl-, 1,2 Pyrrolidine, 3-methyl-	2918 47891 594	025910-96-7 057346-62-0 034375-89-8	25 17 16
2	6.46	15.86	C:\DATABASE\NBS54K.L Hydroperoxide, 1,1-dimethylethyl N,N'-Bis(2-methyl-2-nitrosopentan-	854 30086	000075-91-2 094514-30-4	33 7
3	8.31	4.81	C:\DATABASE\NBS54K.L Phenol, 2-fluoro- Propanoic acid, 2-chloro- Phenol, 4-fluoro-	2246 1861 2247	000367-12-4 000598-78-7 000371-41-5	94 23 22
4	10.87	11.36	C:\DATABASE\NBS54K.L No matches found			
5	12.71	5.73	C:\DATABASE\NBS54K.L 1H-Imidazole, 4-methyl- 1H-Pyrazole, 3-methyl- 1,2-Benzenediol, 3-fluoro-	436 433 4276	000822-36-6 001453-58-3 000363-52-0	28 25 7
6	14.74	14.47	C:\DATABASE\NBS54K.L 4H-Pyrazolo[3,4-d]pyrimidin-4-one, 2H-Quinolizine, 1,3,4,6,7,9a-hexah Benzamide, 3-amino-	5539 5905 5603	000315-30-0 001004-90-6 003544-24-9	42 38 38
7	18.28	12.30	C:\DATABASE\NBS54K.L 1,1'-Biphenyl, 4-fluoro- 1,1'-Biphenyl, 2-fluoro- 4-(2-Hydroxyphenyl)pyrimidine	13567 13566 13454	000324-74-3 000321-60-8 068535-55-7	96 96 50
8	20.28	15.29	C:\DATABASE\NBS54K.L Thiophene, 2-bromo- Thiophene, 3-bromo- 3-Pyridinecarbonitrile, 1,2-dihydr	10970 10971 11498	001003-09-4 000872-31-1 000524-40-3	50 28 12
9	24.92	11.58	C:\DATABASE\NBS54K.L Naphthalene, 1,7-dimethoxy- Pyrrolo[2,3-b]indole, 1,2,3,3a,8,8 PENTACYCLO[8.4.0.0(3,7).0(4,14).0(	16978 16985 17015	005309-18-2 004089-16-1 000000-00-0	36 36 36



Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
10	30.08	4.80	C:\DATABASE\NBS54K.L			
			1,4-Cyclohexadiene, 6-methylene-3,	27845	018636-59-4	40
			Benzene, 1,1',1''-methyldynetriss-	27846	000519-73-3	40
			[1,1'-Biphenyl]-4,4'-diamine, 3,3'	27768	000119-90-4	40



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV8.D  
 Acq Time : 4 Mar 94 9:57 pm  
 Sample : 9402010535  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:40 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	440733	40.00	ng	0.11
21) Naphthalene-d8	14.74	136	1619479	40.00	ng	0.09
40) Acenaphthene-d10	20.28	164	867641	40.00	ng	0.11
67) Phenanthrene-d10	24.92	188	1119049	40.00	ng	0.08
82) Chrysene-d12	33.33	240	181428	40.00	ng	0.19
92) Perylene-d12	38.54	264	46876	40.00	ng	0.48

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.29	112	371134	33.22	ng	83.04%
8) Phenol-d5	11.75	99	463894	31.44	ng	78.60%
23) Nitrobenzene-d5	12.71	82	411678	30.19	ng	75.48%
45) 2-Fluorobiphenyl	18.28	172	806073	25.63	ng	64.08%
66) 2,4,6-Tribromophenol	23.33	330	41909	13.08	ng	32.69%
85) Terphenyl-d14	30.08	244	294455	56.64	ng	141.61%

Target Compounds						Qvalue
84) Pyrene	29.47	202	42923	5.20	ng	m 98

sample wt. = 30.44g % solid = 86-70 %

Actual conc. =  $\frac{5.20 \times 1000}{30.44 \times 0.864} = 197.03 \text{ ppb.}$

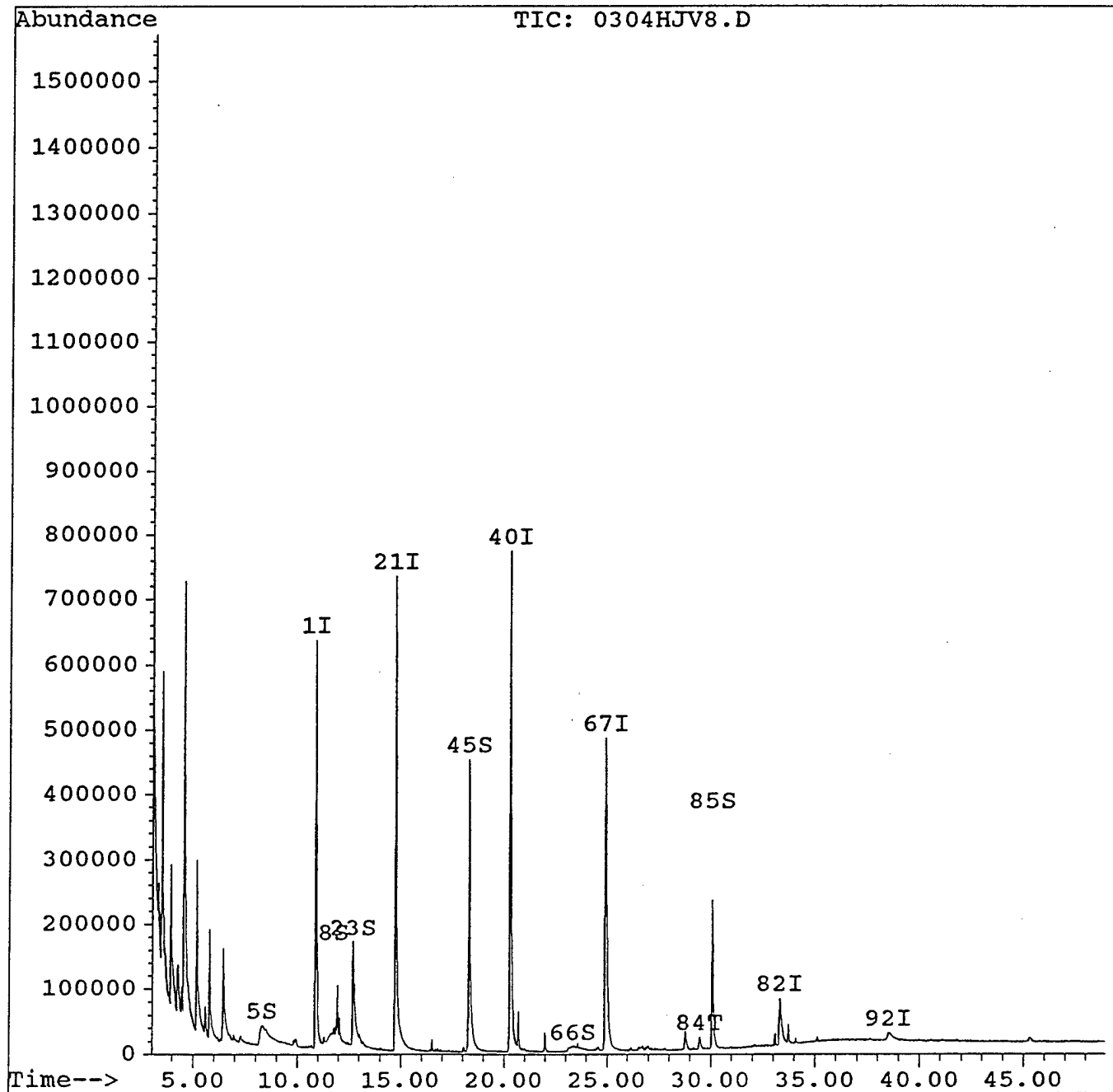


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030494\0304HJV8.D  
Acq Time : 4 Mar 94 9:57 pm  
Sample : 9402010535  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:40 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration

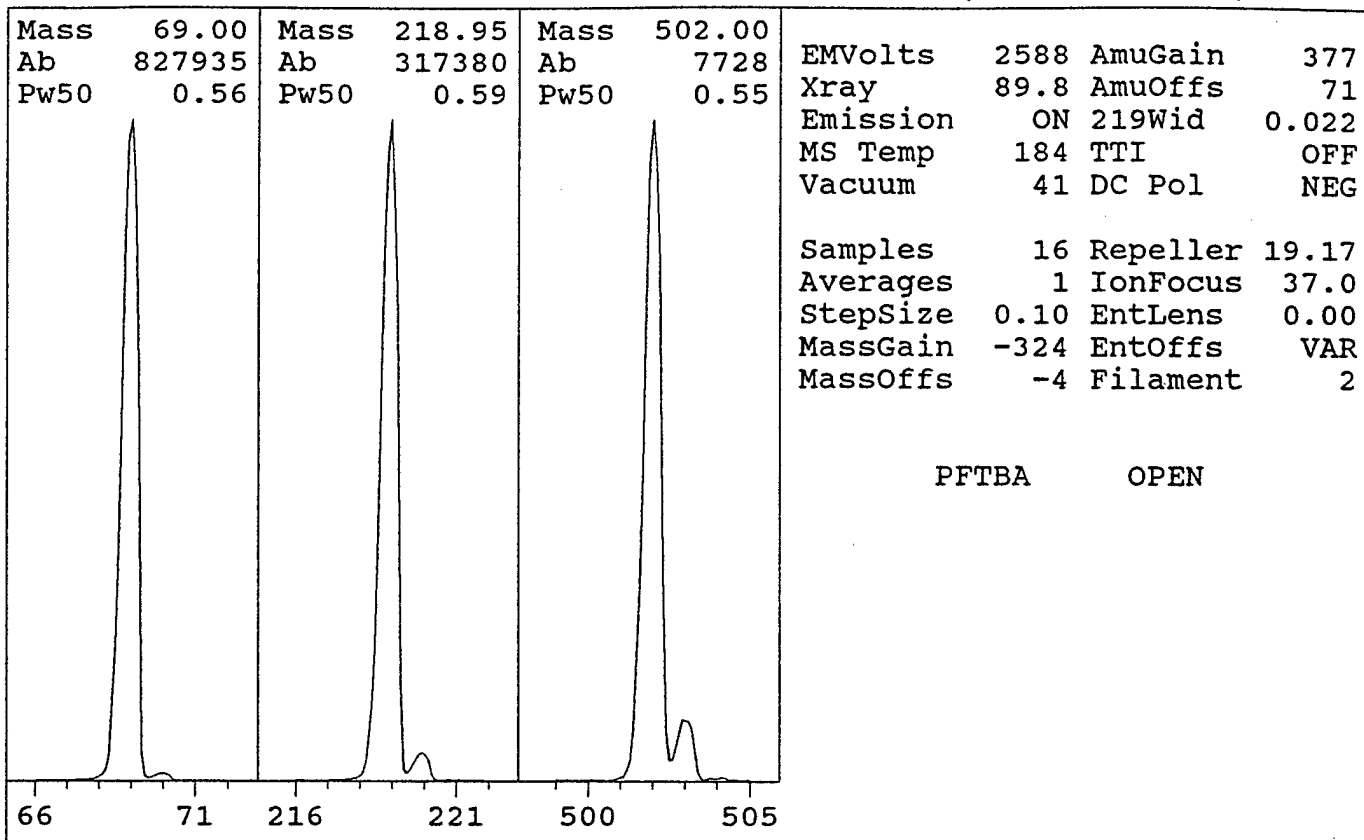




# HP5971 DFTPP Dynamic Target Tune

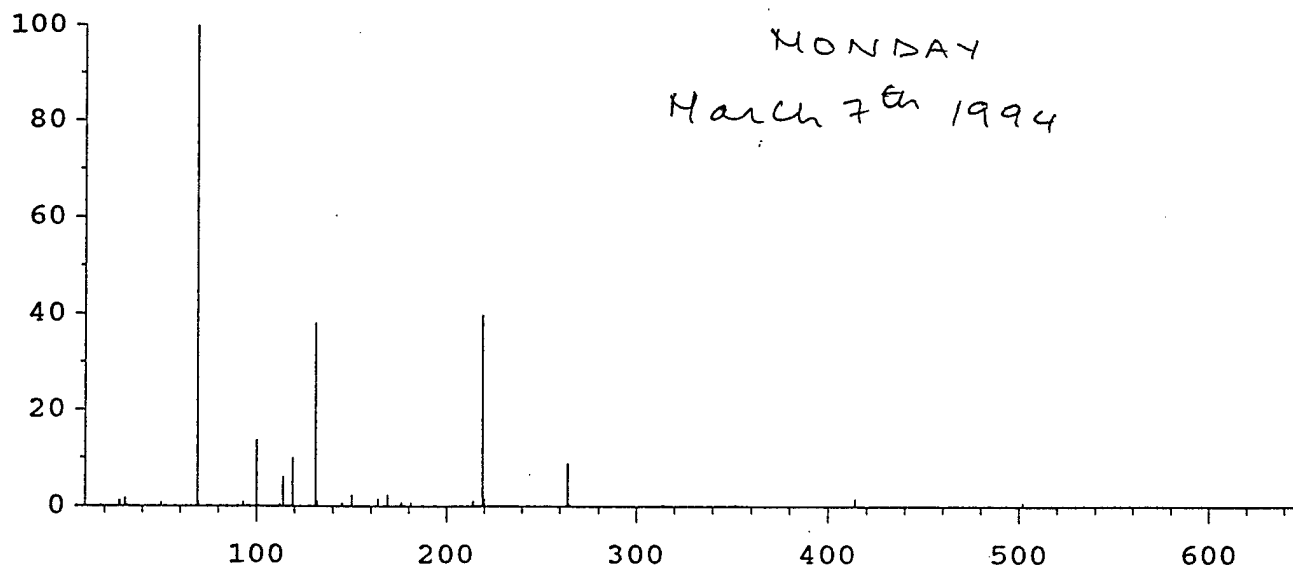
Sat Mar 05 16:05:32 1994

C:\HPCHEM\1\5971\DFTPP.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
104 peaks Base: 69.00 Abundance: 690496

541



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	690496	100.00	70.00	7749	1.12
218.95	274880	39.81	219.95	11850	4.31
501.95	6616	0.96	502.95	670	10.13

TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	17.8	18.3	16.3	16.8
TARGET ABUND(%)	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%)	100.0	38.1	39.8	1.0



## DFTPP

Data File : C:\HPCHEM\1\DATA\7MARCH.D

Acq Time : 5 Mar 94 4:22 pm

Sample : DFTPP TUNE EVALUATION

Misc : 1uL INJECTION (50ng)

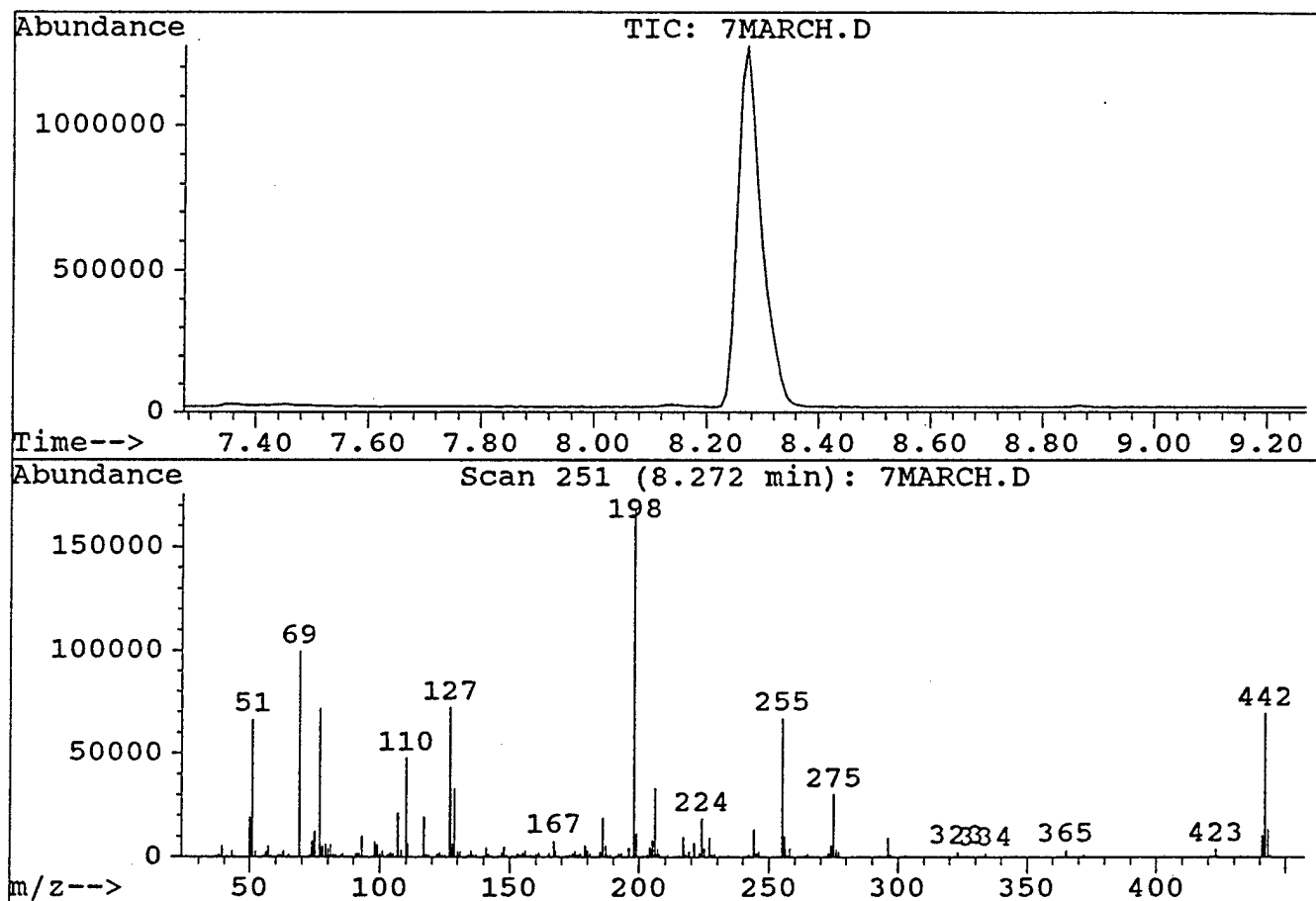
Operator: HJV

Inst : GC/MS

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M

Title :



Peak Apex is scan: 251

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	66216	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	59.4	99488	PASS
70	69	0	2	0.5	541	PASS
127	198	40	60	43.1	72224	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	167424	PASS
199	198	5	9	6.7	11278	PASS
275	198	10	30	18.0	30096	PASS
365	198	1	100	2.0	3399	PASS
441	443	0	100	77.9	10499	PASS
442	198	40	100	41.4	69344	PASS
443	442	17	23	19.4	13482	PASS



# SEQUENCE.LOG

Simulate Run Sequence Sat Mar 05 16:42:02 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0307SV.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\0307942\

Method Path: C:\HPCHEM\1\METHODS\

Line Type	Vial	DataFile	Method	Sample Name
1) Sample	1	0307HV1	8270	SPCC 200PPM
2) Sample	2	0307HV2	8270	CCC B/N 100PPM
3) Sample	3	0307HV3	8270	CCC A 100PPM
4) Sample	4	0307HV4	8270	9402010536
5) Sample	5	0307HV5	8270	9402010537
6) Sample	6	0307HV6	8270	9402010538
7) Sample	7	0307HV7	8270	9402010539
8) Sample	8	0307HV8	8270	9402010540
9) Sample	9	0307HV9	8270	9402010541
10) Sample	10	0307HV10	8270	9402010543
11) Sample	11	0307HV11	8270	9402010544

Bytes Needed: 550000 Space on drive C: 19464192

Sequence Verification Done!



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV1.D  
 Acq Time : 5 Mar 94 4:50 pm  
 Sample : SPCC 200PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:44 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	326897	40.00	ng	0.12
21) Naphthalene-d8	14.74	136	1148283	40.00	ng	0.09
40) Acenaphthene-d10	20.28	164	644737	40.00	ng	0.11
67) Phenanthrene-d10	24.92	188	690138	40.00	ng	0.08
82) Chrysene-d12	33.36	240	80229	40.00	ng	0.02
92) Perylene-d12	38.58	264	8188	40.00	ng	0.02
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00
8) Phenol-d5	10.88	99	3591	0.33	ng	0.02
23) Nitrobenzene-d5	12.41	82	2126	0.22	ng	0.55
45) 2-Fluorobiphenyl	18.33	172	390	0.02	ng	0.01
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00
Target Compounds						Qual
20) N-Nitrosodi-n-propylamine	12.41	70	1481163	254.31	ng	m 97
42) Hexachlorocyclopentadiene	17.68	237	405161	218.59	ng	96
54) 2,4-Dinitrophenol	22.59	184	25299	10.64	ng	m 0
55) 4-Nitrophenol	23.23	139	231386	42.93	ng	m 0

Calculation of RF :-

$$\begin{aligned}
 (1) \text{ N-Nitrosodi-n-propylamine} &= \frac{1481163 \times 40}{326897 \times 200} = 0.90 \checkmark \\
 (2) \text{ Hexachlorocyclopentadiene} &= \frac{405161 \times 40}{644737 \times 200} = 0.125 \checkmark \\
 (3) \text{ 2,4-Dinitrophenol} &= \frac{25299 \times 40}{644737 \times 200} = 0.008 \\
 (4) \text{ 4-Nitrophenol} &= \frac{231386 \times 40}{644737 \times 200} = 0.072 \checkmark
 \end{aligned}$$

SPCC'S 3 cleared.

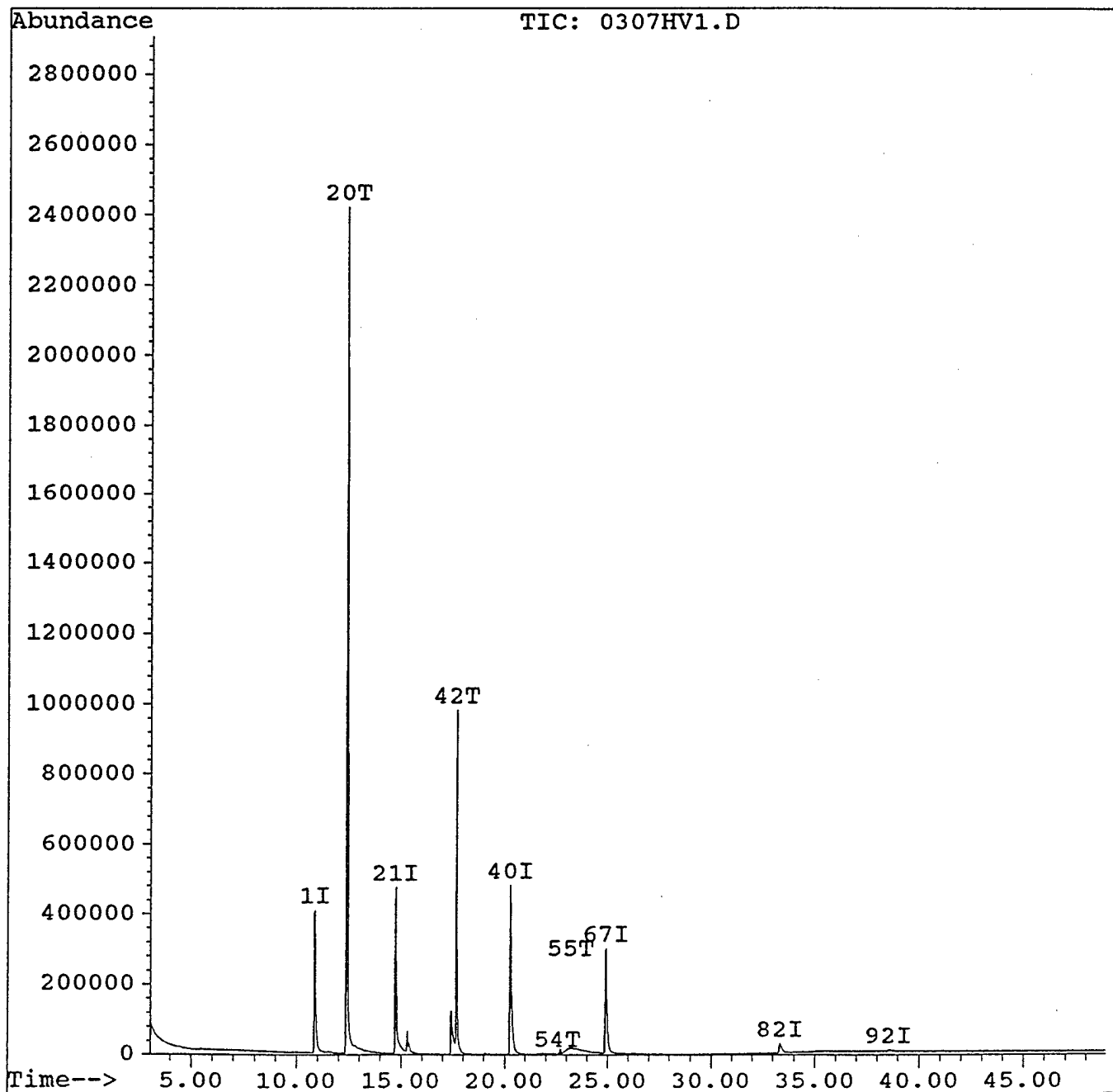


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV1.D  
Acq Time : 5 Mar 94 4:50 pm  
Sample : SPCC 200PPM  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:44 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV2.D  
 Acq Time : 5 Mar 94 5:49 pm  
 Sample : CCC B/N 100PPM  
 Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:48 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.88	152	419469	40.00	ng	0.12
21) Naphthalene-d8	14.74	136	1396501	40.00	ng	0.09
40) Acenaphthene-d10	20.27	164	807322	40.00	ng	0.00
67) Phenanthrene-d10	24.91	188	844804	40.00	ng	0.07
82) Chrysene-d12	33.33	240	100031	40.00	ng	0.00
92) Perylene-d12	38.51	264	22325	40.00	ng	0.05
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00
8) Phenol-d5	10.91	99	9348	0.67	ng	1.06
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00
45) 2-Fluorobiphenyl	18.34	172	576	0.02	ng	0.06
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00
Target Compounds						Qvalue
13) 1,4-Dichlorobenzene	10.93	146	1389559	111.79	ng	100
36) Hexachlorobutadiene	15.40	225	551660	127.85	ng	m 99
53) Acenaphthene	20.37	154	2058587	85.42	ng	m 99
69) Diphenylamine + N-Nitrosod	22.59	169	1099747	46.99	ng	m 97
81) Fluoranthene	28.74	202	1422643	70.65	ng	m 98
93) Di-n-octylphthalate	35.68	149	368588	121.17	ng	m 96
97) Benzo(a)pyrene	38.27	252	102783	98.92	ng	m 96

(#) = qualifier out of range (m) = manual integration

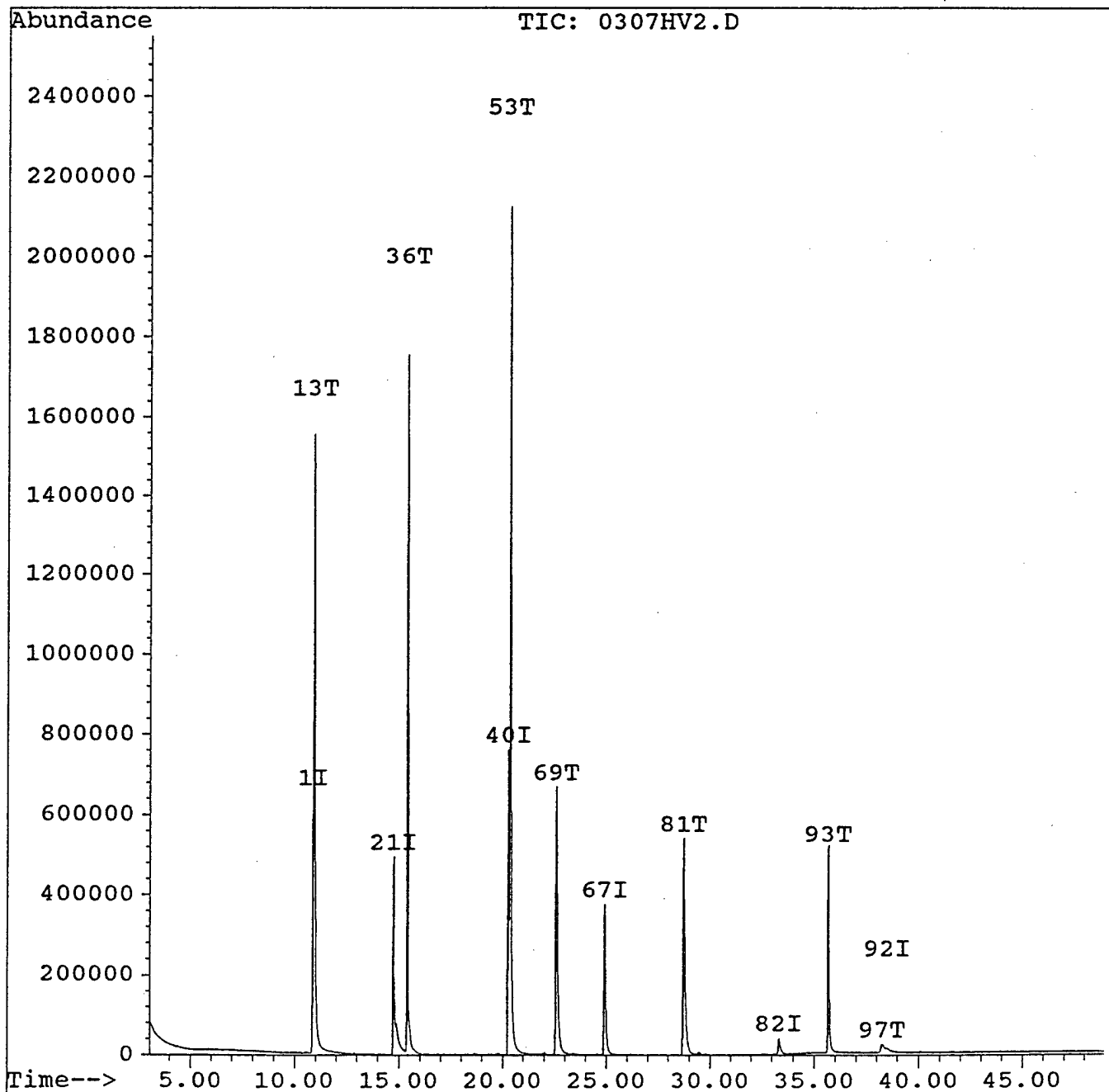


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV2.D  
Acq Time : 5 Mar 94 5:49 pm  
Sample : CCC B/N 100PPM  
Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:48 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV3.D  
 Acq Time : 5 Mar 94 6:47 pm  
 Sample : CCC A 100PPM  
 Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:52 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	411400	40.00	ng	0.10
21) Naphthalene-d8	14.73	136	1409744	40.00	ng	0.13
40) Acenaphthene-d10	20.27	164	787867	40.00	ng	0.10
67) Phenanthrene-d10	24.93	188	767081	40.00	ng	0.08
82) Chrysene-d12	33.38	240	98702	40.00	ng	0.24
92) Perylene-d12	38.65	264	22352	40.00	ng	0.39

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.86	99	3950	0.29	ng	0.12%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.32	172	706	0.02	ng	0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
9) Phenol	11.26	94	1406741	114.62	ng	m
27) 2-Nitrophenol	13.74	139	653602	102.34	ng	91
30) 2,4-Dichlorophenol	15.31	162	920800	109.68	ng	m
38) 4-Chloro-3-methylphenol	17.75	107	911397	105.66	ng	m
43) 2,4,6-Trichlorophenol	18.33	196	510557	86.15	ng	m

Calculation of response factor

$$1) \text{ Phenol} = \frac{1406741 \times 40}{411400 \times 100} = 1.3678$$

% RPD :

$$\frac{1.585 - 1.37 \times 100}{1.585} = 13.56\%$$

$$2) \text{ 2-Nitrophenol} = \frac{653602 \times 40}{1409744 \times 100} = 0.1895$$

$$\frac{0.212 - 0.186 \times 100}{0.212} = 12.26\%$$

$$3) \text{ 2,4-Dichlorophenol} = \frac{920800 \times 40}{1409744 \times 100} = 0.2613$$

$$\frac{0.301 - 0.262 \times 100}{0.301} = 12.96\%$$

$$4) \text{ 4-chloro-3-methylphenol} = \frac{911397 \times 40}{1409744 \times 100} = 0.2580$$

$$\frac{0.322 - 0.270 \times 100}{0.322} = 16.15\%$$

$$5) \text{ 2,4,6-Trichlorophenol} = \frac{510557 \times 40}{787867 \times 100} = 0.260$$

$$\frac{0.293 - 0.260 \times 100}{0.293} = 11.26\%$$

(#) = qualifier out of range (m) = manual integration

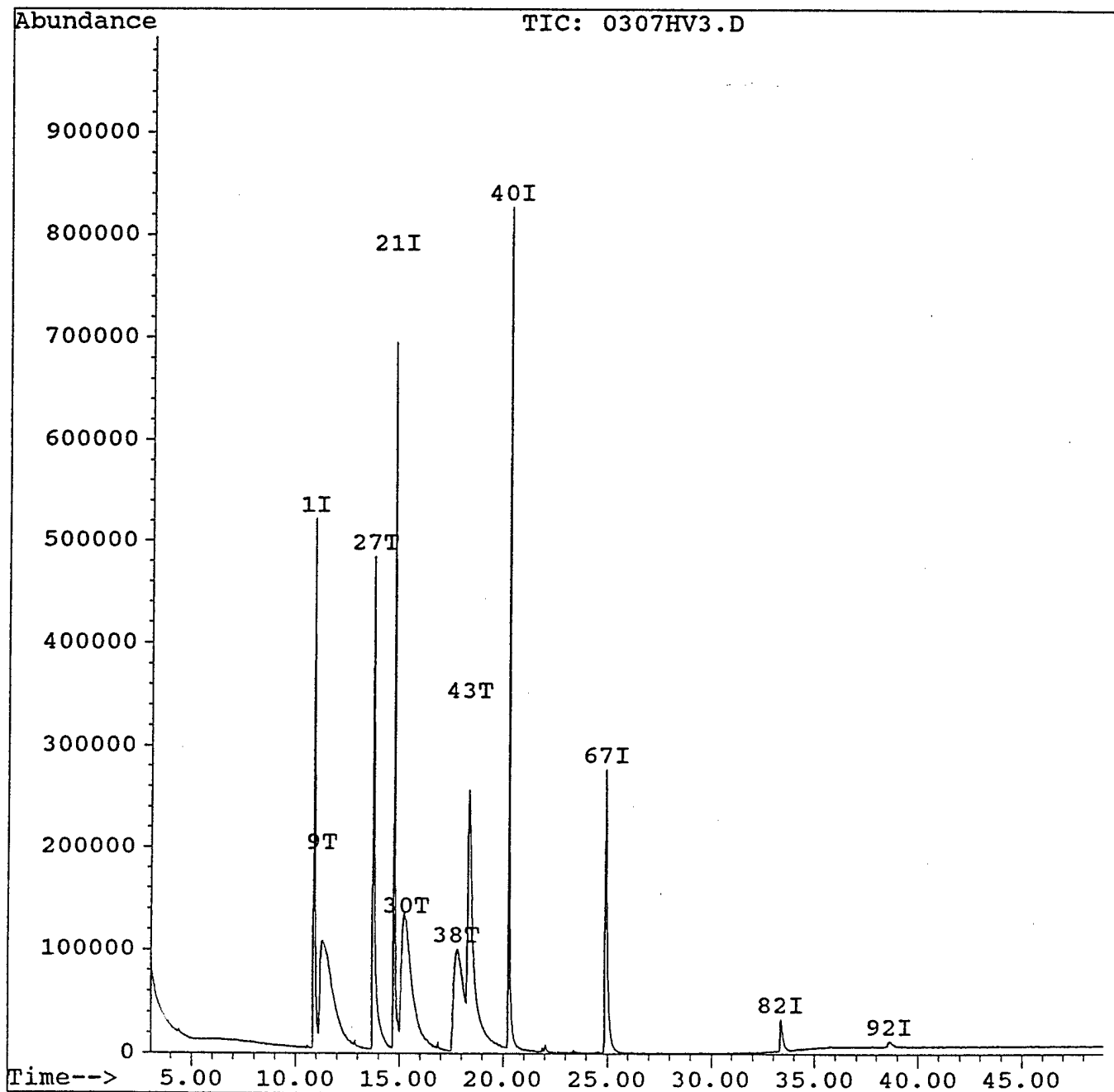


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV3.D  
Acq Time : 5 Mar 94 6:47 pm  
Sample : CCC A 100PPM  
Misc : 1uL INJECTON, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:52 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV4.D  
 Acq Time : 5 Mar 94 7:45 pm  
 Sample : 9402010536  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 20:56 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.87	152	477551	40.00	ng	0.11
21) Naphthalene-d8	14.73	136	1582949	40.00	ng	0.13
40) Acenaphthene-d10	20.27	164	906010	40.00	ng	0.10
67) Phenanthrene-d10	24.91	188	900347	40.00	ng	0.06
82) Chrysene-d12	33.32	240	149219	40.00	ng	0.13
92) Perylene-d12	38.54	264	46119	40.00	ng	0.13

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.27	112	212886	17.58	ng	43.95%
8) Phenol-d5	11.64	99	329163	20.59	ng	51.47%
23) Nitrobenzene-d5	12.68	82	453308	34.01	ng	85.03%
45) 2-Fluorobiphenyl	18.27	172	924369	28.15	ng	70.17%
66) 2,4,6-Tribromophenol	23.37	330	15216	4.55	ng	11.17%
85) Terphenyl-d14	30.08	244	214827	50.24	ng	125.61%

Target Compounds	R.T.	QIon	Response	Conc	Units	Quality
91) Bis(2-ethylhexyl) phthalat	33.70	149	66114	12.30	ng	96

wt. of sample = 29.60 g      % solid = 91.90%

$$\text{Actual conc.} = \frac{12.30 \times 1000}{29.60 \times 0.919} = 452.17 \text{ ppb}$$

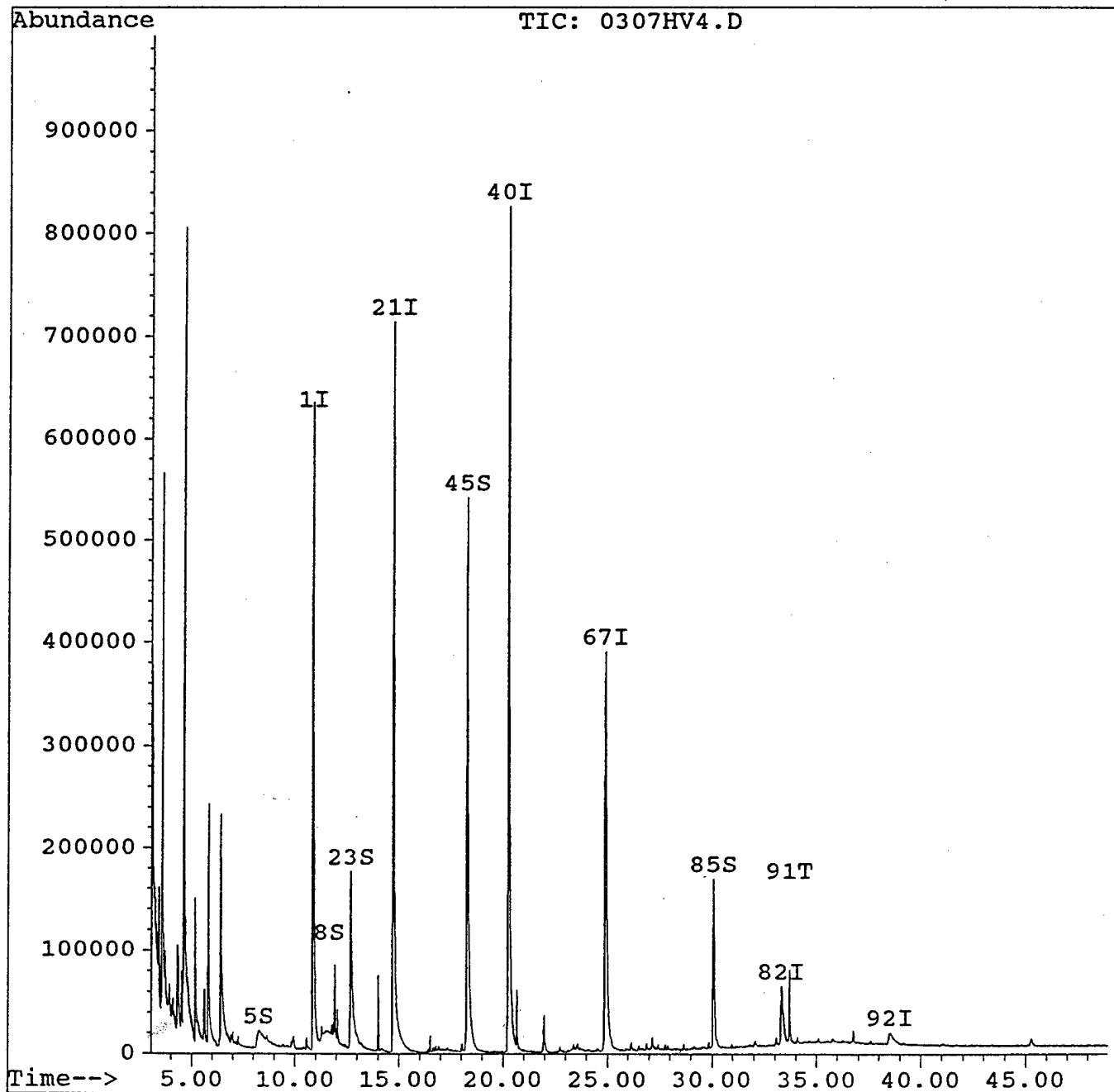


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV4.D  
Acq Time : 5 Mar 94 7:45 pm  
Sample : 9402010536  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 20:56 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV5.D  
 Acq Time : 5 Mar 94 8:43 pm  
 Sample : 9402010537  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:05 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	478325	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	1596234	40.00	ng	0.18
40) Acenaphthene-d10	20.26	164	917817	40.00	ng	0.10
67) Phenanthrene-d10	24.90	188	854435	40.00	ng	0.06
82) Chrysene-d12	33.34	240	103870	40.00	ng	0.11
92) Perylene-d12	38.58	264	26133	40.00	ng	0.12

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.24	112	234692	19.35	ng	48.19
8) Phenol-d5	11.58	99	384011	23.98	ng	59.55
23) Nitrobenzene-d5	12.68	82	471748	35.10	ng	87.76
45) 2-Fluorobiphenyl	18.27	172	904971	27.20	ng	68.11
66) 2,4,6-Tribromophenol	23.47	330	13099	3.86	ng	9.16
85) Terphenyl-d14	30.09	244	174769	58.72	ng	146.81

Target Compounds	R.T.	QIon	Response	Conc	Units	Qual
91) Bis(2-ethylhexyl) phthalat	33.71	149	24551	6.56	ng	94

wt. of sample = 29.90 g % solid = 89.52%

$$\text{Actual conc.} = \frac{6.56 \times 1000}{29.90 \times 0.8952} = 244.95 \text{ ppb.}$$

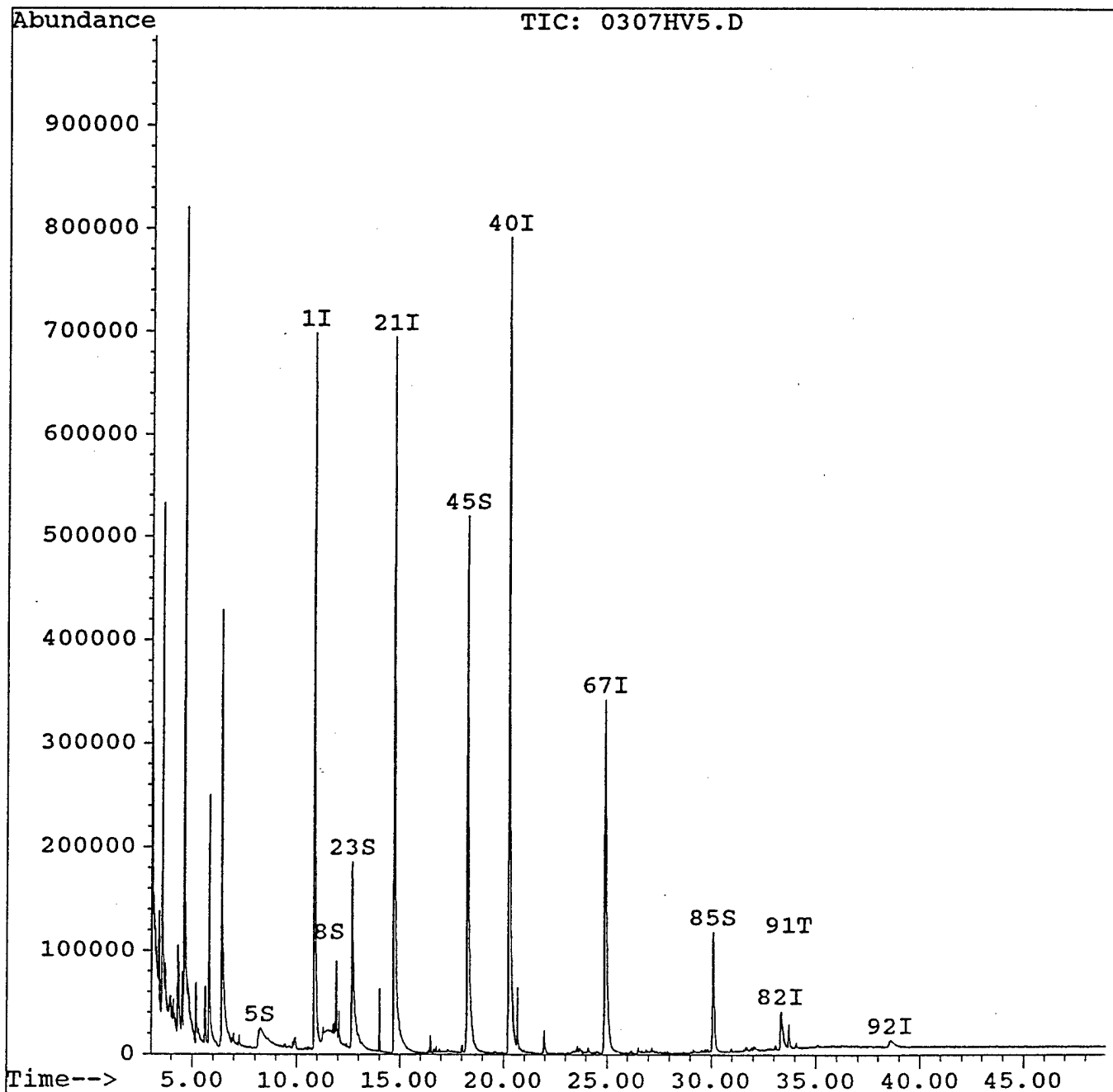


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV5.D  
Acq Time : 5 Mar 94 8:43 pm  
Sample : 9402010537  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:05 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV6.D  
 Acq Time : 5 Mar 94 9:41 pm  
 Sample : 9402010538  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:09 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	524827	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1760336	40.00	ng	0.06
40) Acenaphthene-d10	20.26	164	1006366	40.00	ng	0.06
67) Phenanthrene-d10	24.90	188	1006664	40.00	ng	0.06
82) Chrysene-d12	33.34	240	125685	40.00	ng	0.21
92) Perylene-d12	38.60	264	26284	40.00	ng	0.04

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.27	112	268748	20.20	ng	50.00%
8) Phenol-d5	11.63	99	297115	16.91	ng	42.28%
23) Nitrobenzene-d5	12.68	82	423852	28.60	ng	71.50%
45) 2-Fluorobiphenyl	18.27	172	851853	23.35	ng	58.09%
66) 2,4,6-Tribromophenol	23.35	330	14307	3.85	ng	9.02%
85) Terphenyl-d14	30.07	244	210933	58.57	ng	146.43%

Target Compounds Qual

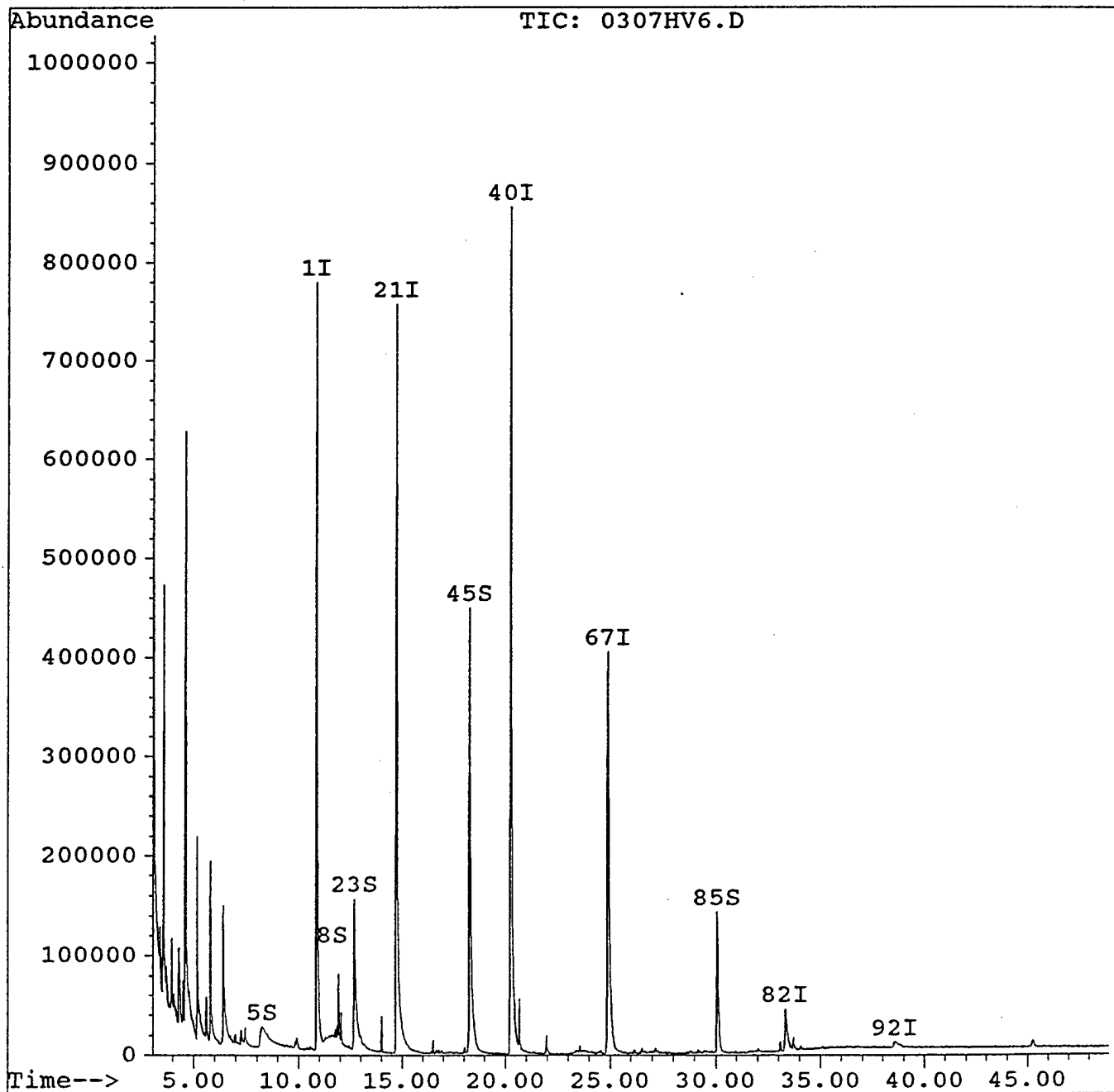


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV6.D  
Acq Time : 5 Mar 94 9:41 pm  
Sample : 9402010538  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:09 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV7.D  
 Acq Time : 5 Mar 94 10:39 pm  
 Sample : 9402010539  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:12 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	406124	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1500768	40.00	ng	0.07
40) Acenaphthene-d10	20.27	164	863756	40.00	ng	0.00
67) Phenanthrene-d10	24.91	188	874256	40.00	ng	0.07
82) Chrysene-d12	33.33	240	112490	40.00	ng	0.19
92) Perylene-d12	38.57	264	26246	40.00	ng	0.02
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.26	112	356868	34.66	ng	86.06
8) Phenol-d5	11.64	99	475975	35.01	ng	87.02
23) Nitrobenzene-d5	12.69	82	475258	37.61	ng	94.03
45) 2-Fluorobiphenyl	18.27	172	925444	29.56	ng	73.00
66) 2,4,6-Tribromophenol	23.46	330	27613	8.65	ng	21.04
85) Terphenyl-d14	30.07	244	221277	68.65	ng	171.63
Target Compounds						Qual
87) Butylbenzylphthalate	31.82	149	36463	11.63	ng	93
91) Bis(2-ethylhexyl) phthalat	33.71	149	49007	12.10	ng	96

wt. of sample = 30.43 g % solid = 84.35%

Actual conc.

$$(87) \quad \frac{11.63 \times 1000}{30.43 \times 0.8435} = 453.10 \text{ ppb}$$

$$(91) \quad \frac{12.10 \times 1000}{30.43 \times 0.8435} = 471.41 \text{ ppb}$$

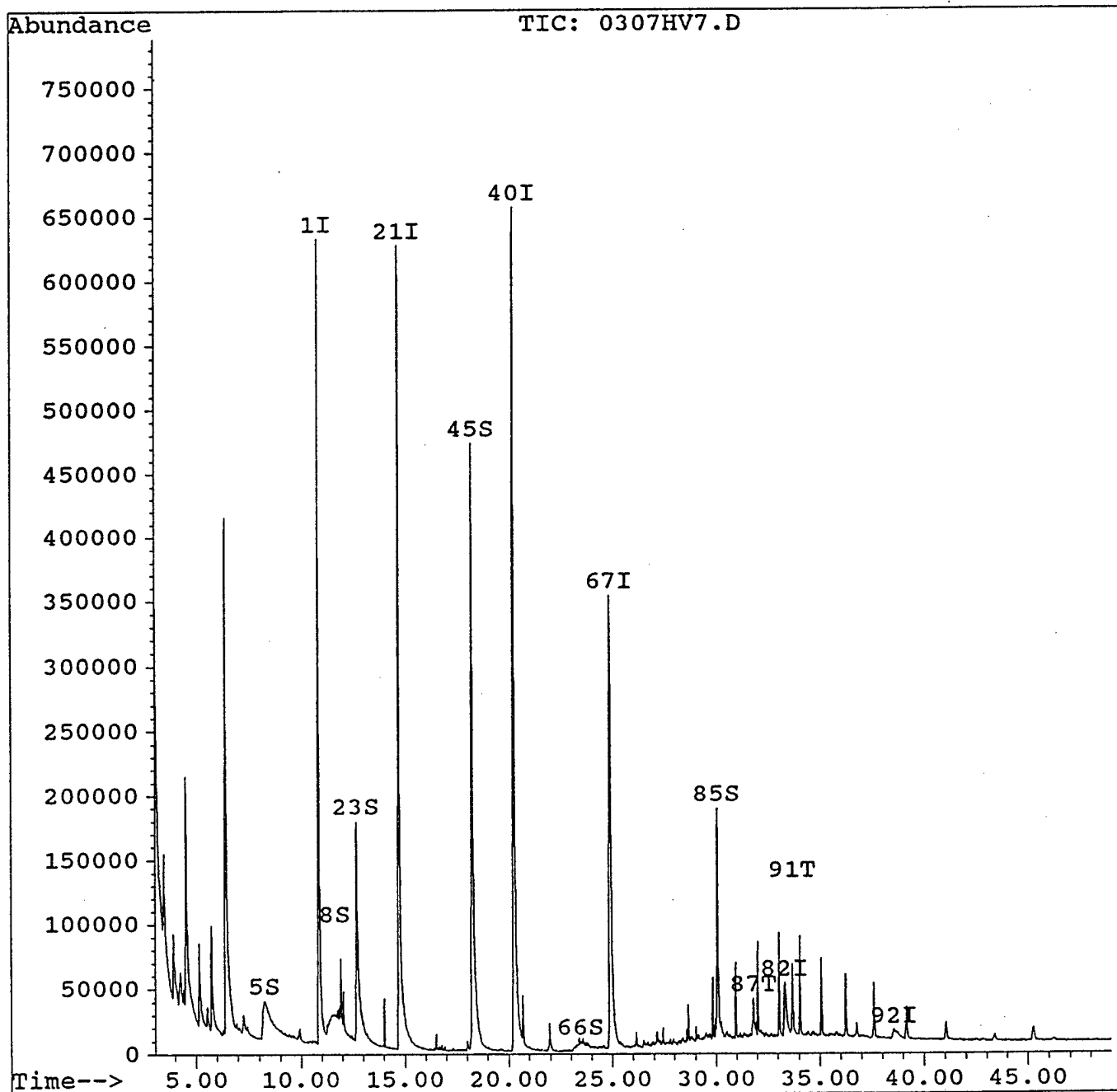


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV7.D  
Acq Time : 5 Mar 94 10:39 pm  
Sample : 9402010539  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:12 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV8.D  
 Acq Time : 5 Mar 94 11:37 pm  
 Sample : 9402010540  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:18 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.87	152	27165	40.00	ng	0.12
21) Naphthalene-d8	14.72	136	167157	40.00	ng	0.07
40) Acenaphthene-d10	20.29	164	56087	40.00	ng	0.12
67) Phenanthrene-d10	25.01	188	77881	40.00	ng	0.17
82) Chrysene-d12	33.47	240	5985	40.00	ng	0.34
92) Perylene-d12	38.70	264	603	40.00	ng	0.6

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.49	112	26529	38.52	ng	96.29
8) Phenol-d5	11.35	99	54883	60.35	ng	150.87
23) Nitrobenzene-d5	12.71	82	91205	64.81	ng	162.02
45) 2-Fluorobiphenyl	18.27	172	66491	32.71	ng	81.77
66) 2,4,6-Tribromophenol	23.28	330	9118	44.01	ng	110.08
85) Terphenyl-d14	30.15	244	9220	53.76	ng	134.41

Target Compounds

Qvalue

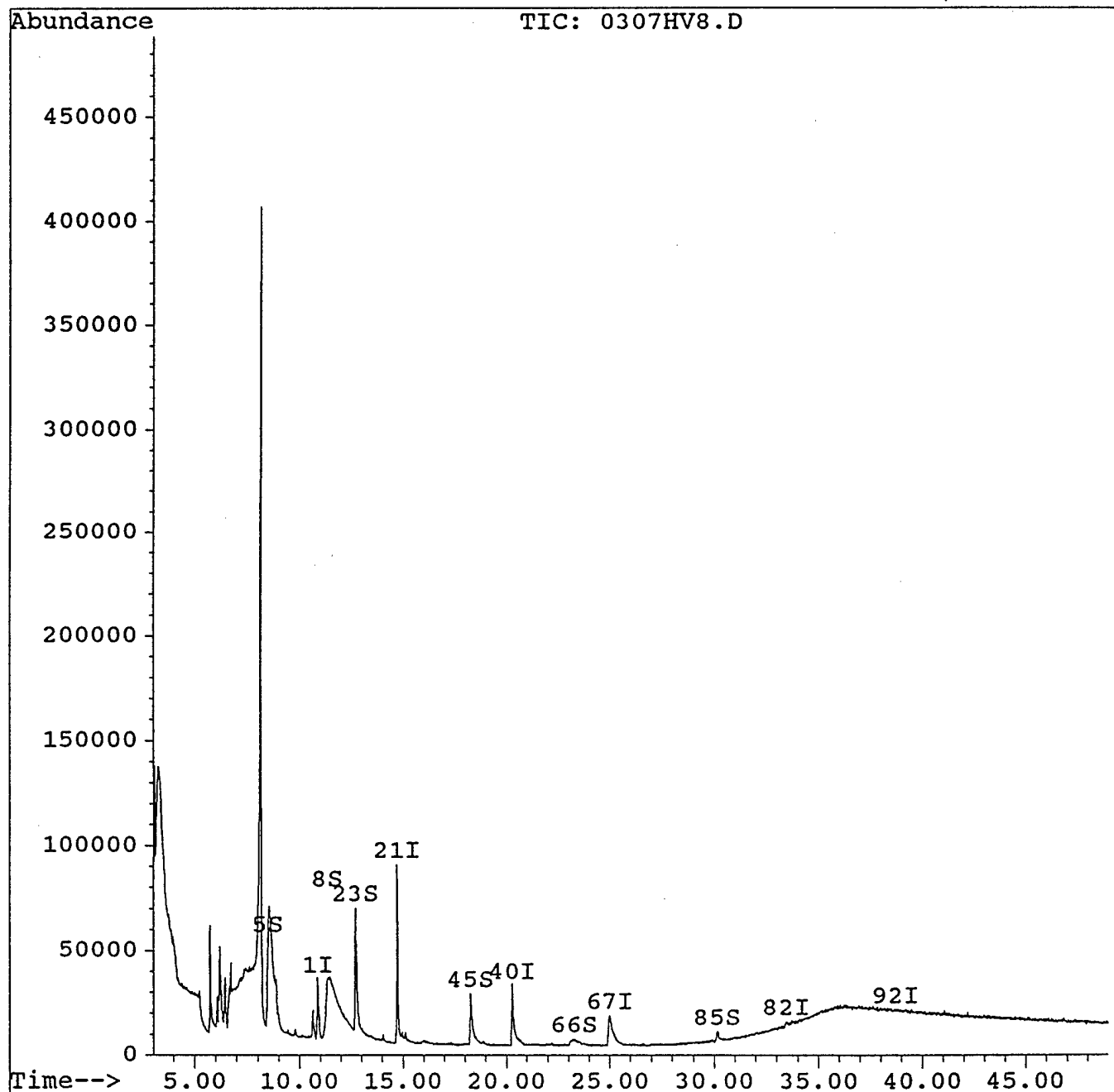


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV8.D  
Acq Time : 5 Mar 94 11:37 pm  
Sample : 9402010540  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:18 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV9.D  
 Acq Time : 6 Mar 94 12:35 am  
 Sample : 9402010541  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:24 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	39916	40.00	ng	0.10
21) Naphthalene-d8	14.73	136	223731	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	79750	40.00	ng	0.10
67) Phenanthrene-d10	24.97	188	99897	40.00	ng	0.13
82) Chrysene-d12	33.44	240	8891	40.00	ng	0.31
92) Perylene-d12	38.66	264	2338	40.00	ng	0.61

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.51	112	49579	48.99	ng	122.49
8) Phenol-d5	11.39	99	55327	41.40	ng	103.51
23) Nitrobenzene-d5	12.70	82	112379	59.66	ng	149.15
45) 2-Fluorobiphenyl	18.27	172	87808	30.38	ng	75.95
66) 2,4,6-Tribromophenol	23.26	330	8956	30.40	ng	76.00
85) Terphenyl-d14	30.13	244	14190	55.70	ng	139.25

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
84) Pyrene	29.50	202	3961	9.80	ng	m 79

Actual wt. of sample = 30.44g % solid = 82.53%

$$\text{Conc.} = \frac{9.80 \times 1000}{30.44 \times 0.8253} = 390.24 \text{ Ppb.}$$

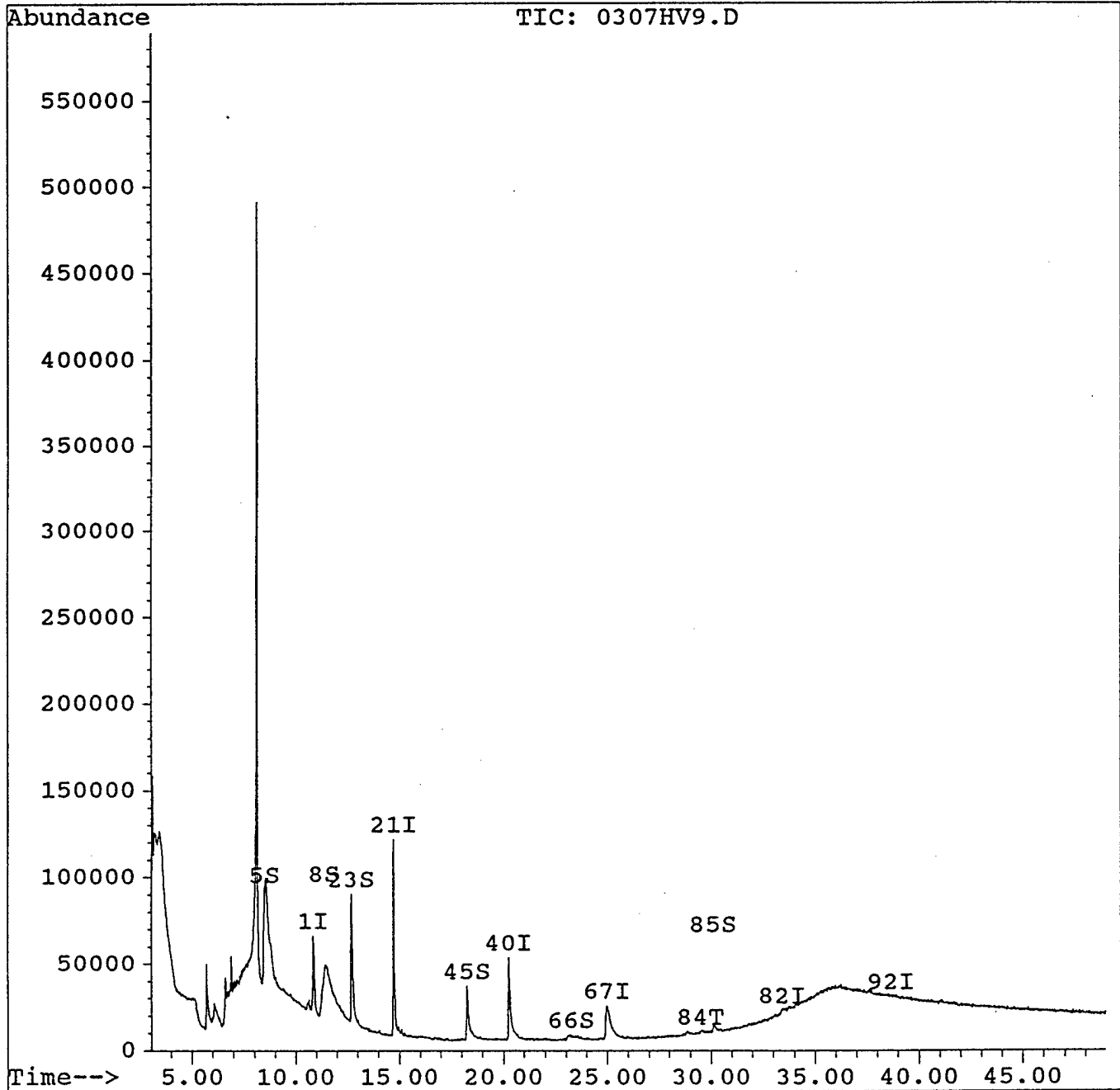


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV9.D  
Acq Time : 6 Mar 94 12:35 am  
Sample : 9402010541  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:24 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV10.D  
 Acq Time : 6 Mar 94 1:33 am  
 Sample : 9402010543  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:28 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	458759	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	1505116	40.00	ng	0.08
40) Acenaphthene-d10	20.26	164	900648	40.00	ng	0.09
67) Phenanthrene-d10	24.91	188	945788	40.00	ng	0.06
82) Chrysene-d12	33.34	240	127552	40.00	ng	0.21
92) Perylene-d12	38.57	264	22518	40.00	ng	0.31

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00
8) Phenol-d5	11.92	99	1559	0.10	ng	0.25
23) Nitrobenzene-d5	12.68	82	211673	16.70	ng	41.76
45) 2-Fluorobiphenyl	18.26	172	468182	14.34	ng	35.86
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00
85) Terphenyl-d14	30.08	244	144476	39.53	ng	98.83

Target Compounds

Qvalue

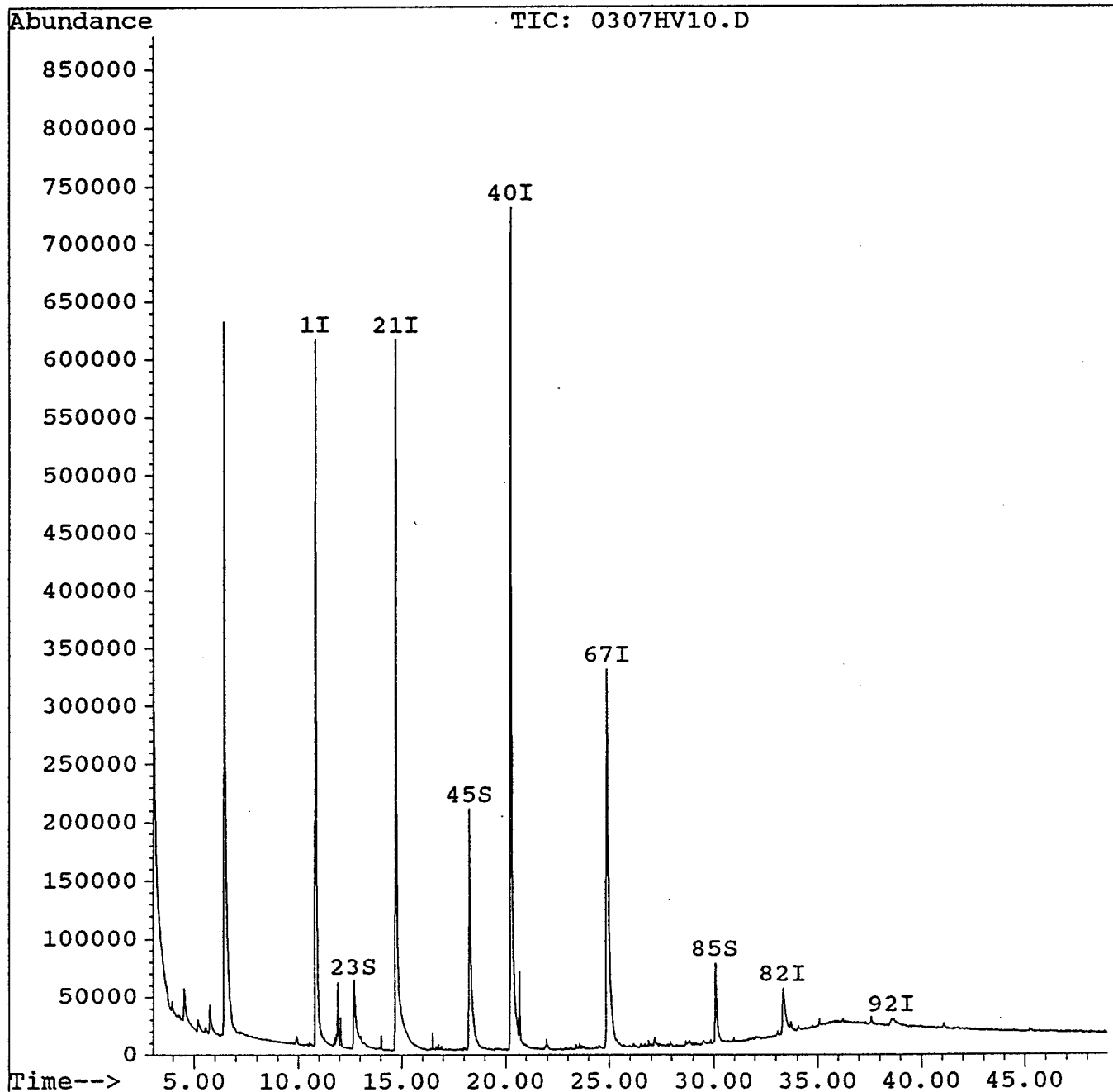


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV10.D  
Acq Time : 6 Mar 94 1:33 am  
Sample : 9402010543  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:28 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV11.D  
 Acq Time : 6 Mar 94 2:31 am  
 Sample : 9402010544  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:31 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	434130	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1420434	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	843886	40.00	ng	0.08
67) Phenanthrene-d10	24.90	188	881640	40.00	ng	0.05
82) Chrysene-d12	33.33	240	118311	40.00	ng	0.19
92) Perylene-d12	38.61	264	19848	40.00	ng	0.06

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.20	112	369567	33.58	ng	83.06
8) Phenol-d5	11.69	99	436823	30.06	ng	75.04
23) Nitrobenzene-d5	12.68	82	424021	35.46	ng	88.64
45) 2-Fluorobiphenyl	18.27	172	836385	27.35	ng	68.26
66) 2,4,6-Tribromophenol	23.29	330	39670	12.73	ng	31.02
85) Terphenyl-d14	30.07	244	224152	66.12	ng	165.30

Target Compounds Qvalue

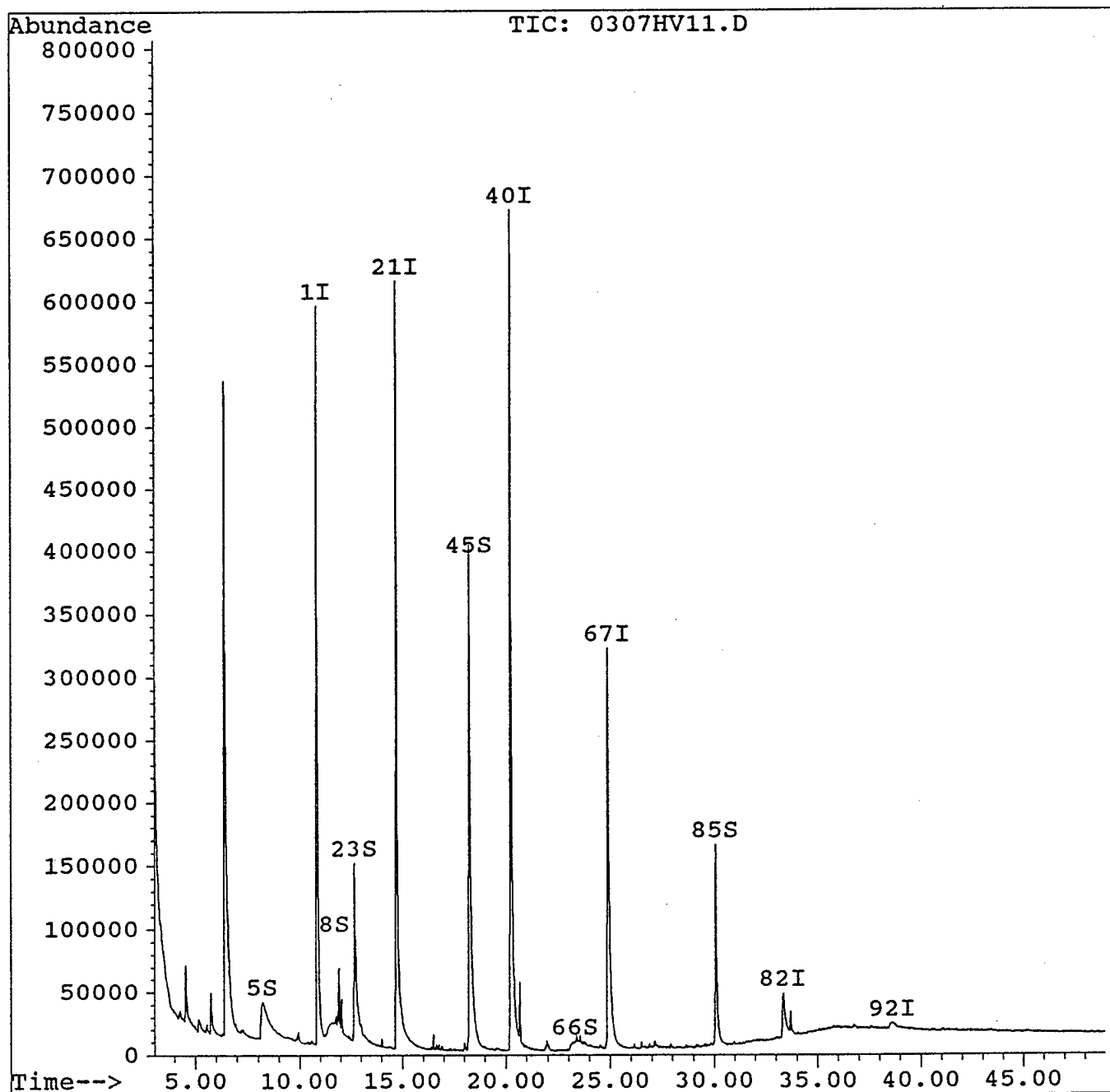


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0307942\0307HV11.D  
Acq Time : 6 Mar 94 2:31 am  
Sample : 9402010544  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:31 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration

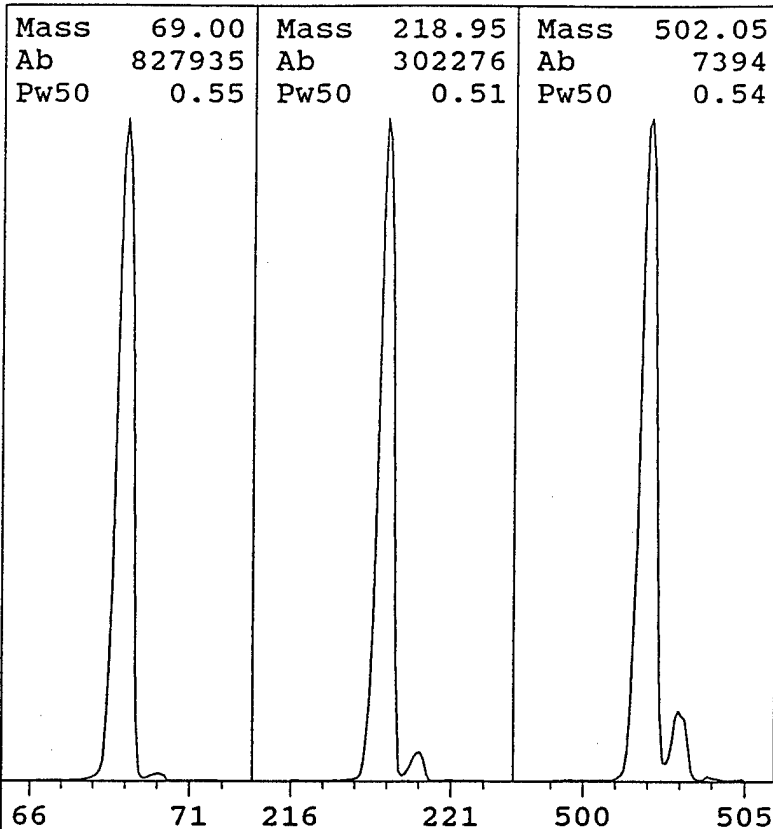




# HP5971 DFTPP Dynamic Target Tune

Sun Mar 06 16:10:56 1994

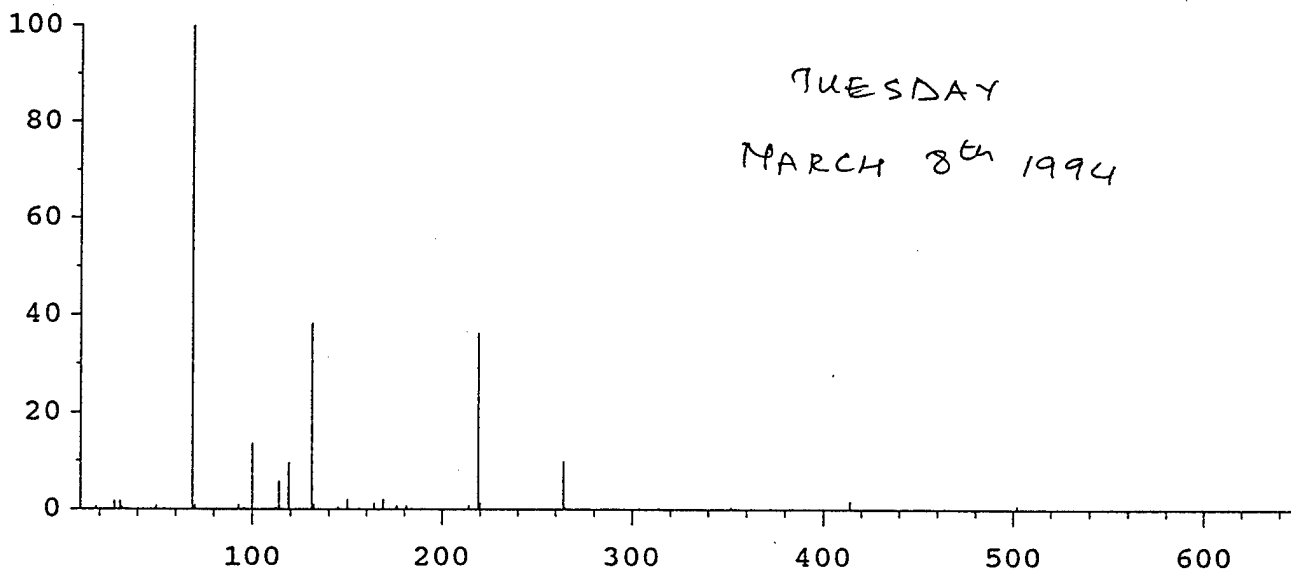
C:\HPCHEM\1\5971\DFTPP.U



Mass 69.00 Mass 218.95 Mass 502.05  
 Ab 827935 Ab 302276 Ab 7394  
 Pw50 0.55 Pw50 0.51 Pw50 0.54  
 EMVolts 2729 AmuGain 380  
 Xray 94.1 AmuOffs 65  
 Emission ON 219Wid -0.019  
 MS Temp 184 TTI OFF  
 Vacuum 40 DC Pol NEG  
 Samples 16 Repeller 19.17  
 Averages 1 IonFocus 37.0  
 StepSize 0.10 EntLens 0.00  
 MassGain -322 EntOffs VAR  
 MassOffs -3 Filament 2

PFTBA OPEN

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
 114 peaks Base: 68.95 Abundance: 681216



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	681216	100.00	70.05	7291	1.07
219.00	248000	36.41	220.00	10413	4.20
502.00	6399	0.94	503.00	634	9.91

TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	18.3	17.1	19.3	16.6
TARGET ABUND(%)	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%)	100.0	38.4	36.4	0.9



## DFTPP

Data File : C:\HPCHEM\1\DATA\8MARCH.D

Acq Time : 6 Mar 94 4:25 pm

Sample : DFTPP TUNE EVALUATION

Misc : 1uL INJECTION (50nG)

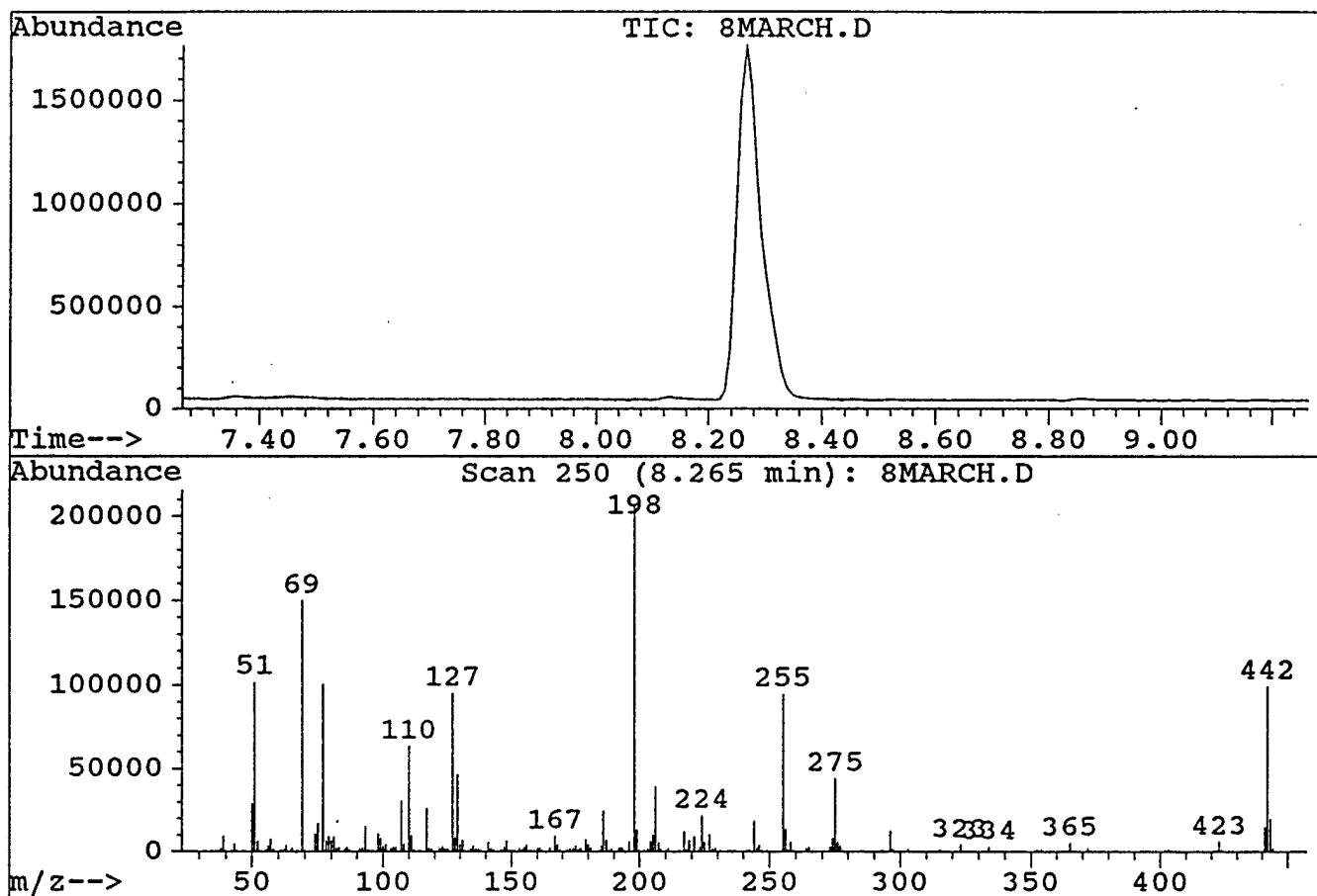
Operator: HJV

Inst : GC/MS

Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M

Title :



Peak Apex is scan: 250

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	49.4	101664	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	72.8	149824	PASS
70	69	0	2	0.5	819	PASS
127	198	40	60	46.2	95000	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	205696	PASS
199	198	5	9	6.3	13010	PASS
275	198	10	30	21.5	44176	PASS
365	198	1	100	2.4	4935	PASS
441	443	0	100	74.9	14719	PASS
442	198	40	100	48.2	99216	PASS
443	442	17	23	19.8	19664	PASS

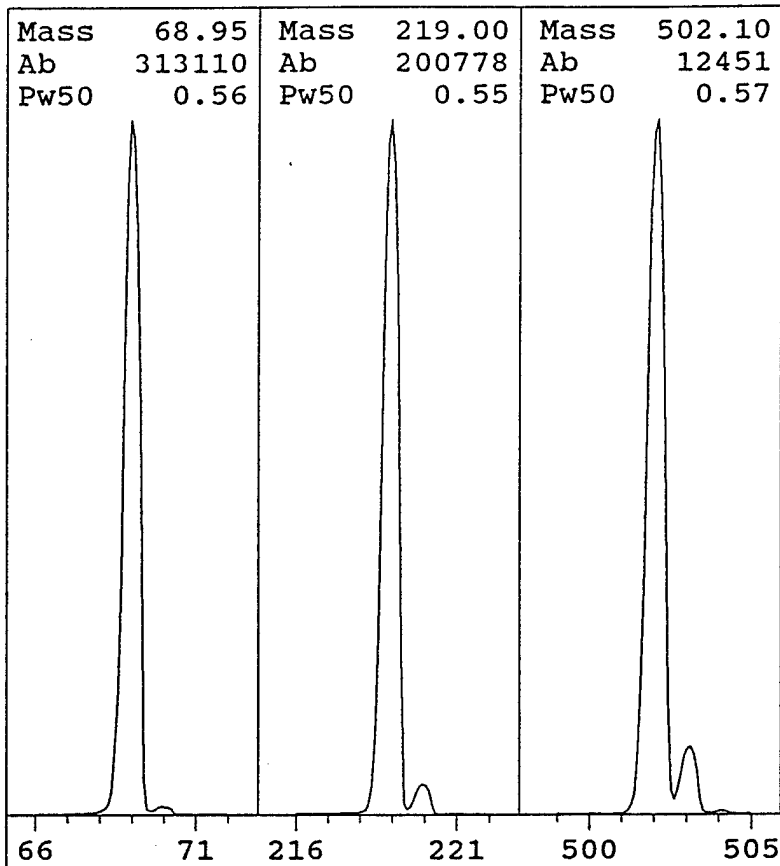


# HP5971 Standard Spectra AutoTune

Instrument: GC/MS

Mon Mar 07 14:41:46 1994

C:\HPCHEM\1\5971\ATUNE.U



EMVolts 2447 AmuGain 374  
Xray 89.8 AmuOffs 66  
Emission ON 219Wid -0.032  
MS Temp 185 TTI OFF  
Vacuum 40 DC Pol NEG

Samples 16 Repeller 14.99  
Averages 1 IonFocus 38.0  
StepSize 0.10 EntLens 26.10  
MassGain -319 EntOffs 6.02  
MassOffs -3 Filament 2

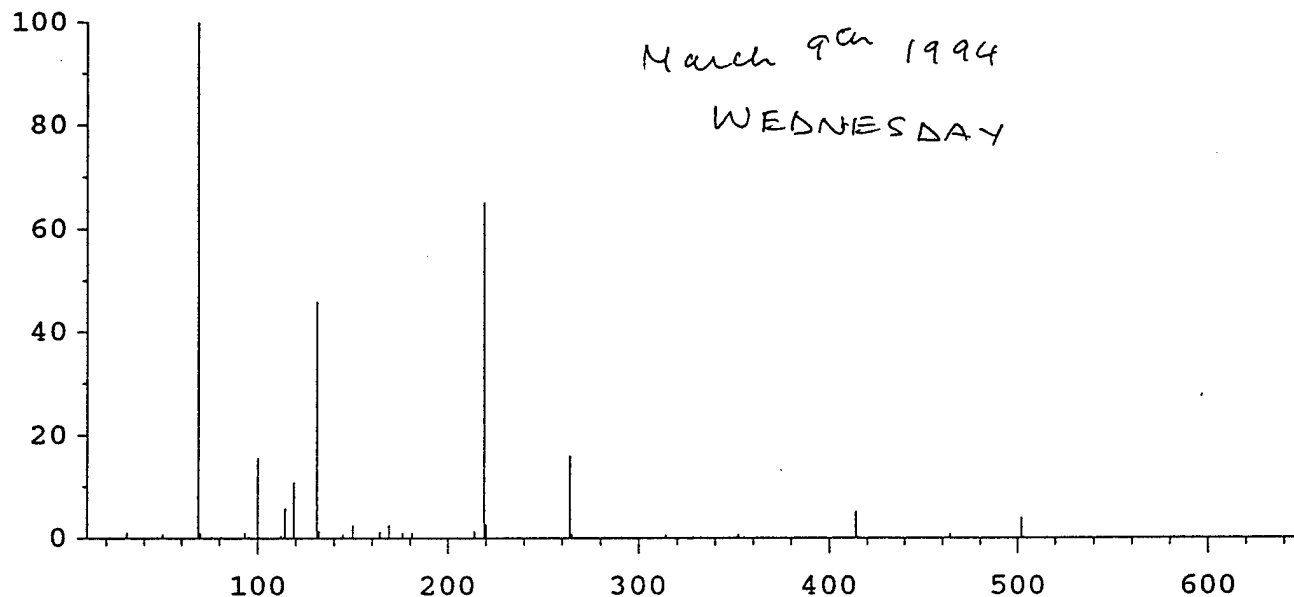
PFTBA OPEN

Formulae :-  

$$\text{conc (mg/kg or ppb)} = \frac{(A_s)(I_s)(V_t)}{(A_{is})(RF)(V_i)(W_s)(D)}$$

$\therefore = \frac{\text{conc. obs.} \times 1000}{\text{Wt. of sample} \times \% \text{ solid}}$

Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
81 peaks Base: 68.95 Abundance: 266816



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	266816	100.00	69.95	2989	1.12
218.95	173888	65.17	219.90	7434	4.28
502.05	11093	4.16	503.05	1165	10.50

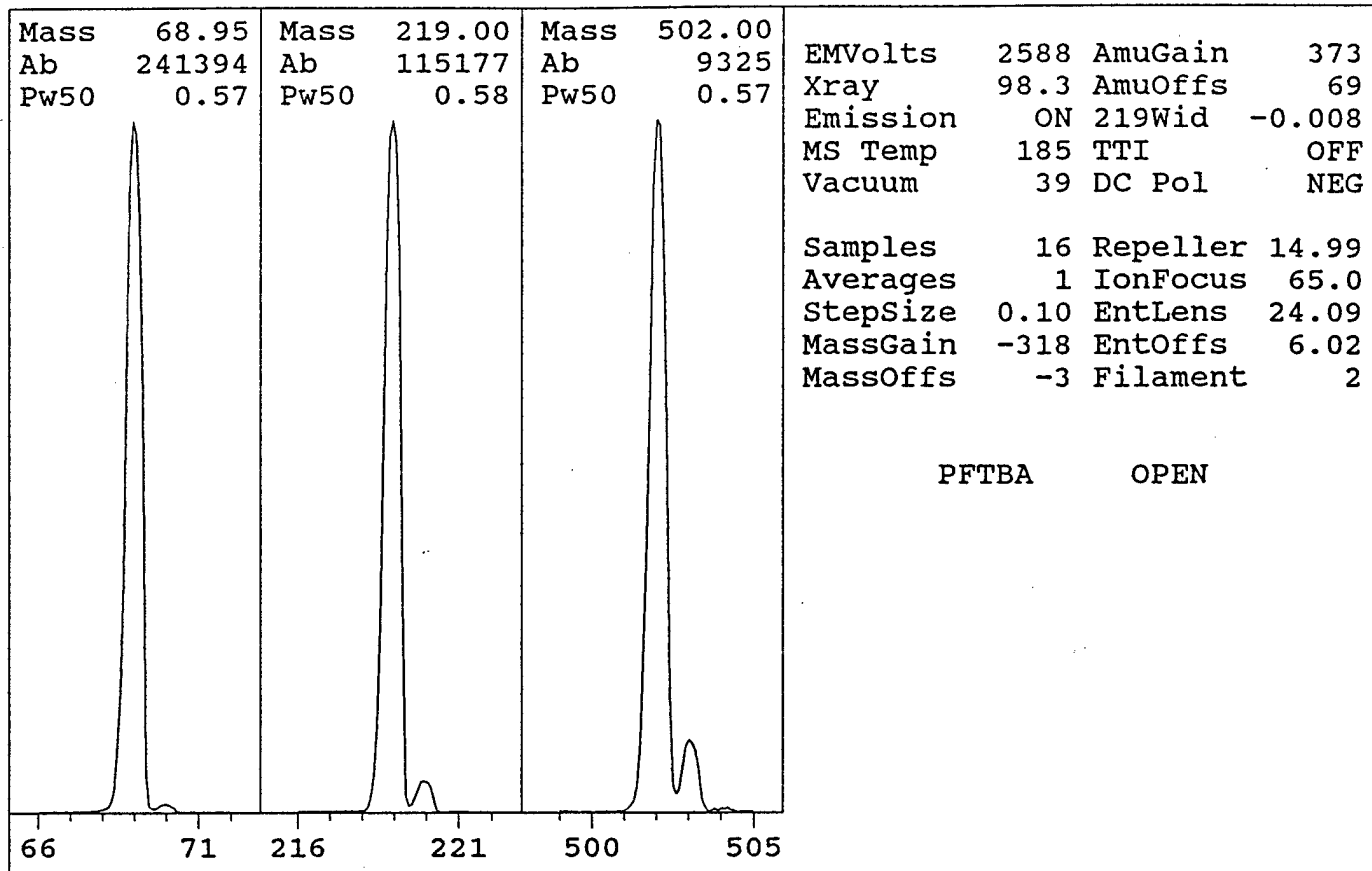


# HP5971 Standard Spectra AutoTune

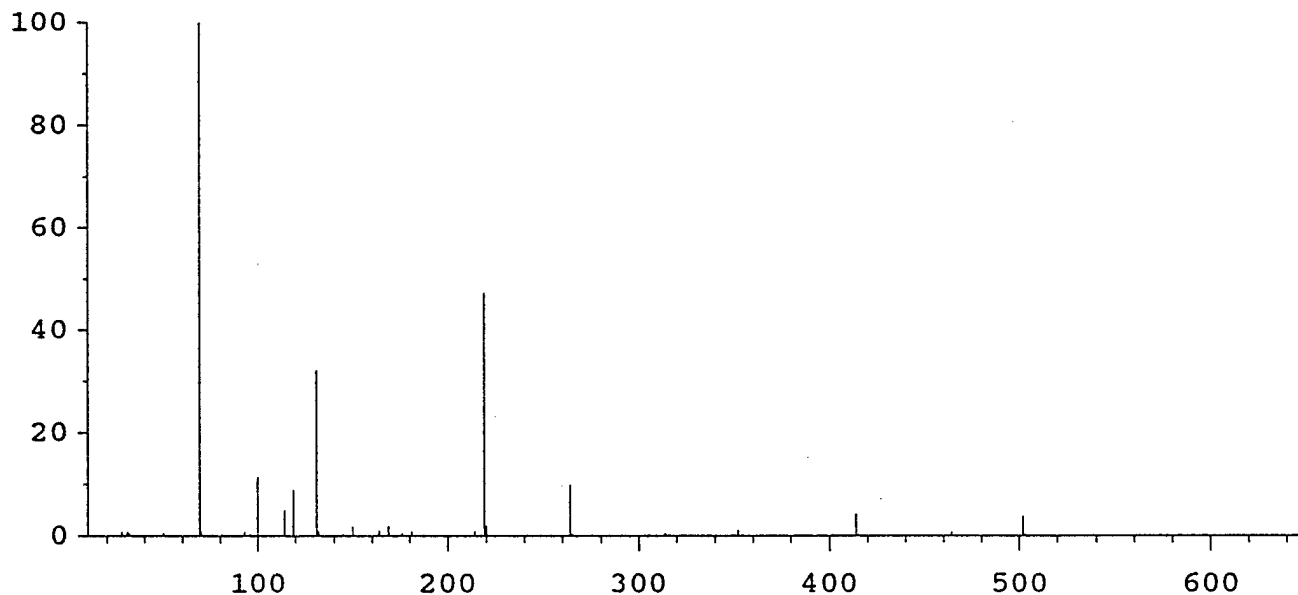
Instrument: GC/MS

Wed Mar 09 02:49:58 1994

C:\HPCHEM\1\5971\ATUNE.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
73 peaks Base: 69.00 Abundance: 216576



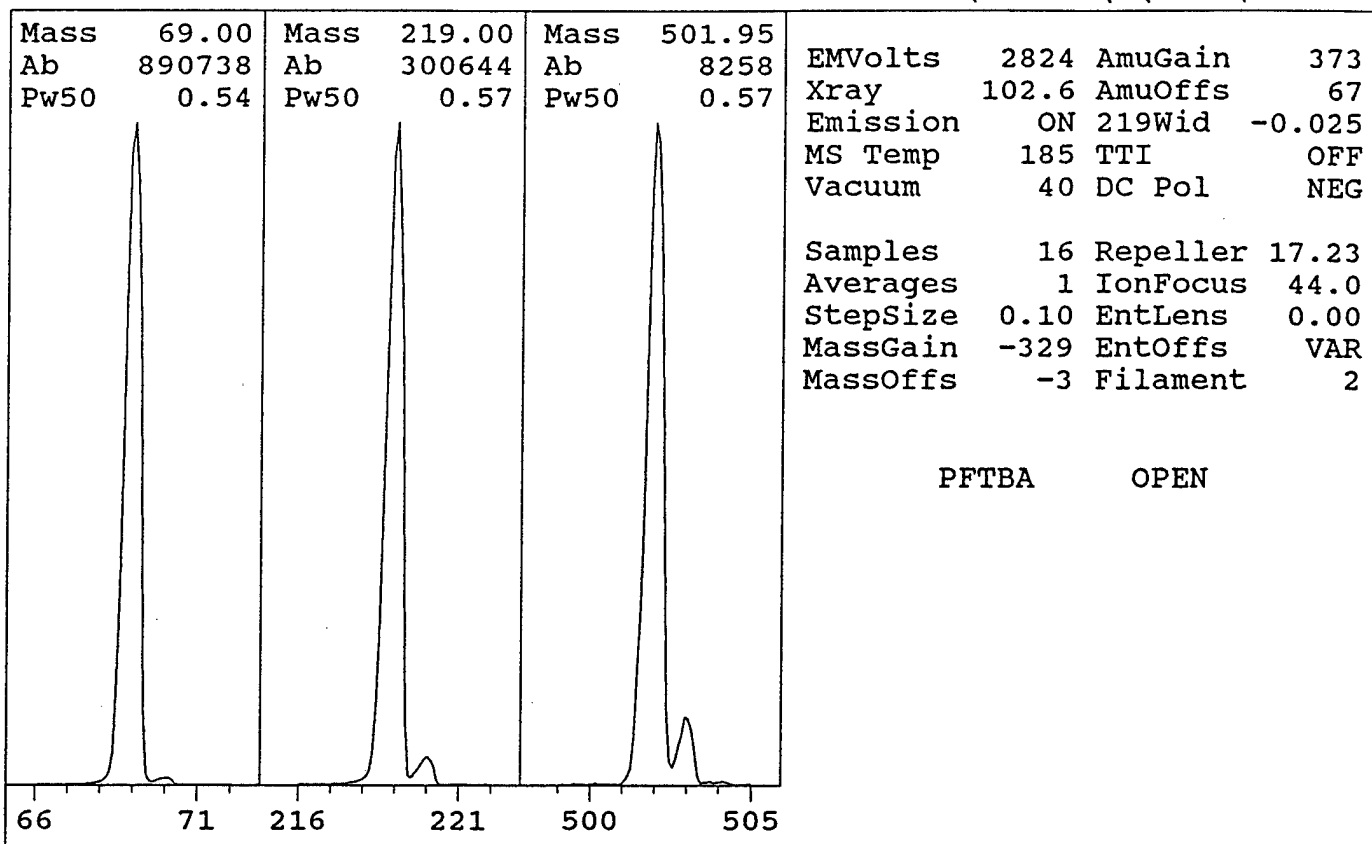
Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
69.00	216576	100.00	70.00	2271	1.05
219.00	102776	47.45	220.00	4498	4.38
502.00	8656	4.00	503.00	827	9.55



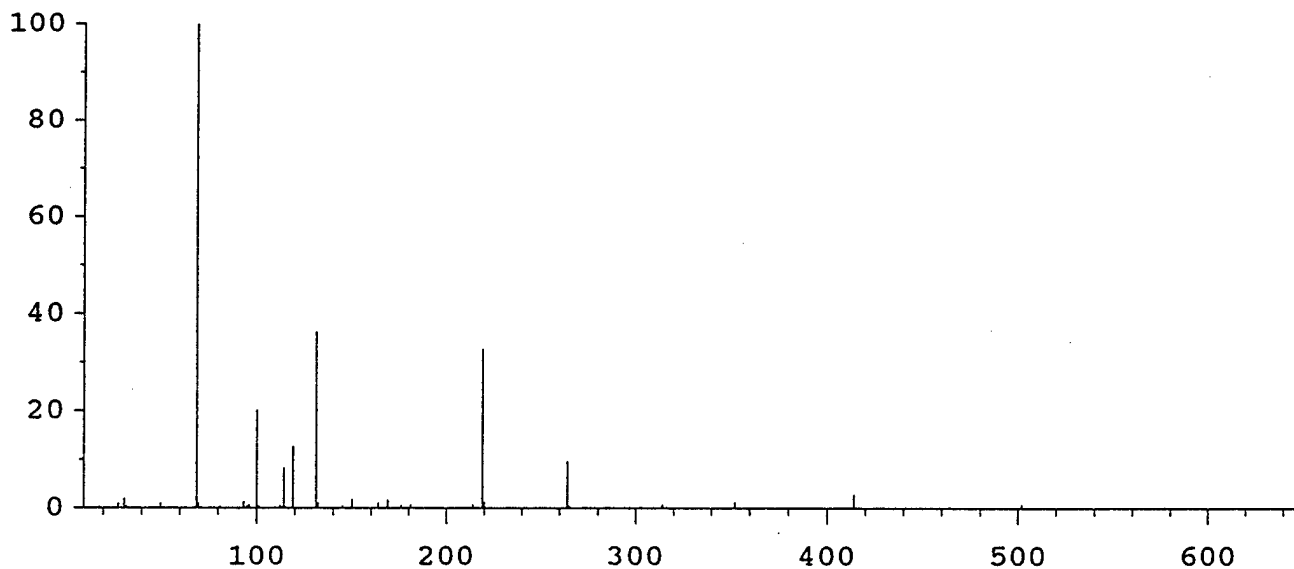
# HP5971 DFTPP Dynamic Target Tune

Wed Mar 09 02:58:27 1994

C:\HPCHEM\1\5971\DFTPP.U



Scan: 10.00 - 650.00 Samples: 16 Thresh: 150 Step: 0.10  
130 peaks Base: 68.95 Abundance: 732928



Mass	Abund	Rel Abund	Iso Mass	Iso Abund	Iso Ratio
68.95	732928	100.00	69.95	8236	1.12
219.00	241344	32.93	220.00	10299	4.27
501.95	7251	0.99	502.95	808	11.14

TARGET MASS:	69	131	219	502
DYNAMIC ENT OFFSET:	12.0	23.6	27.4	15.1
TARGET ABUND(%)	100.0	35.0	32.0	0.8
ACTUAL TUNE ABUND(%)	100.0	36.4	32.9	1.0

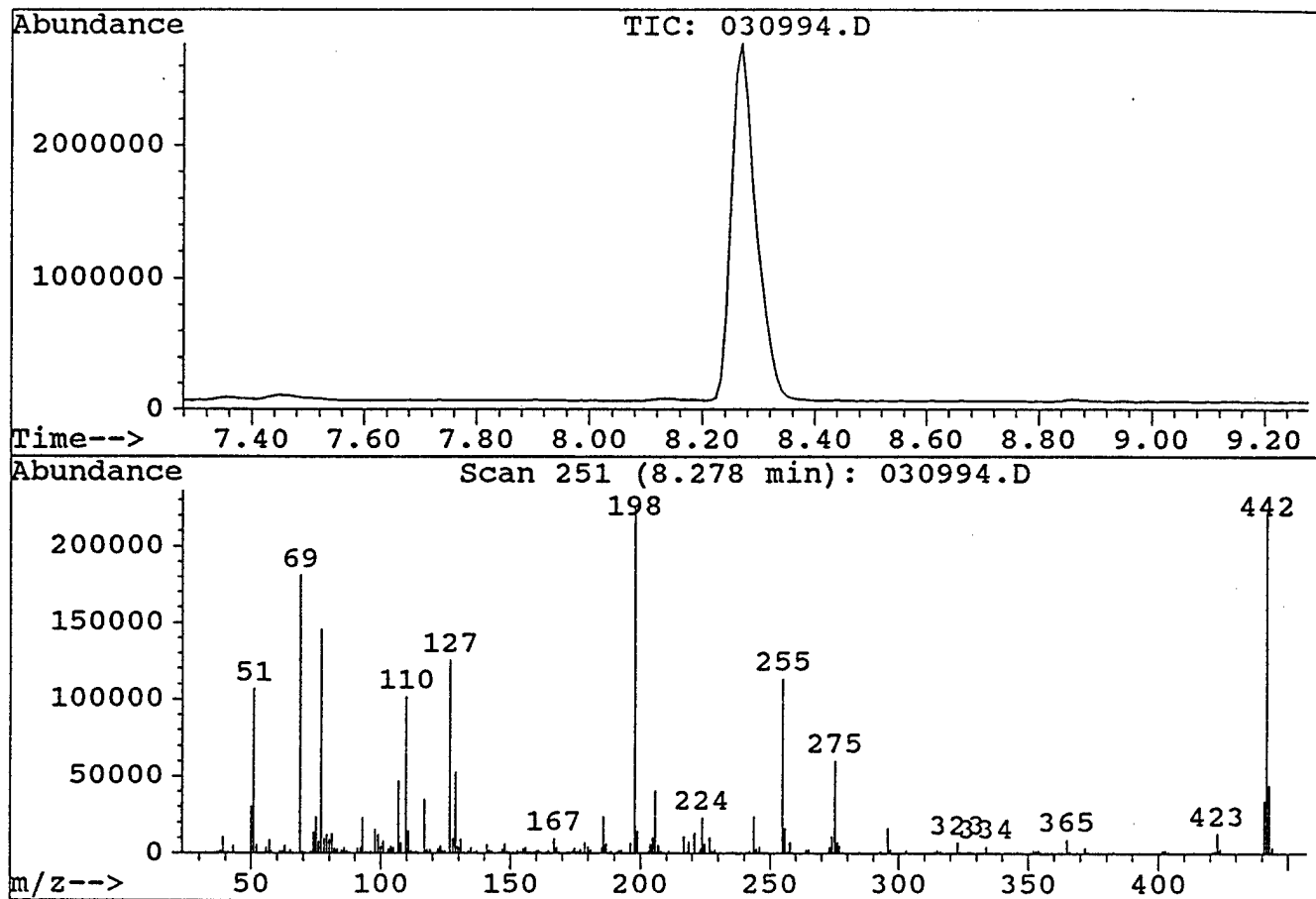


## DFTPP

Data File : C:\HPCHEM\1\DATA\030994.D  
Acq Time : 9 Mar 94 3:05 am  
Sample : DFTPP TUNE EVALUATION  
Misc : 1uL INJECTION (50nG)

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\DFTPP625.M  
Title :



Peak Apex is scan: 251

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	47.5	106752	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	80.5	181120	PASS
70	69	0	2	0.6	1158	PASS
127	198	40	60	55.8	125616	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	224960	PASS
199	198	5	9	6.4	14479	PASS
275	198	10	30	26.8	60376	PASS
365	198	1	100	4.1	9148	PASS
441	443	0	100	77.0	34304	PASS
442	198	40	100	100.0	224960	PASS
443	442	17	23	19.8	44536	PASS



## SEQUENCE.LOG

Simulate Run Sequence Wed Mar 09 03:36:20 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0309SV.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\030994\

Method Path: C:\HPCHEM\1\METHODS\

Line Type	Vial	DataFile	Method	Sample Name
1) Sample	1	0309HJV1	8270	SPCC 200PPM
2) Sample	2	0309HJV2	8270	CCC B/N 100PPM
3) Sample	3	0309HJV3	8270	CCC A 100PPM
4) Sample	4	0309HJV4	8270	9402010542
5) Sample	5	0309HJV5	8270	9402010551
6) Sample	6	0309HJV6	8270	9402010558
7) Sample	7	0309HJV7	8270	9402010559
8) Sample	8	0309HJV8	8270	9402010560
9) Sample	9	0309HJV9	8270	9402010561
10) Sample	10	0309HV10	8270	9402010562
11) Sample	11	0309HV11	8270	9402010563
12) Sample	12	0309HV12	8270	EXTR. BLANK

Bytes Needed: 600000 Space on drive C: 67125248

Sequence Verification Done!



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV1.D  
 Acq Time : 9 Mar 94 3:44 am  
 Sample : SPCC 200PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:30 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	230236	40.00	ng	0.11
21) Naphthalene-d8	14.73	136	880591	40.00	ng	0.08
40) Acenaphthene-d10	20.26	164	424387	40.00	ng	0.09
67) Phenanthrene-d10	24.89	188	552230	40.00	ng	0.05
82) Chrysene-d12	33.29	240	148474	40.00	ng	0.15
92) Perylene-d12	38.45	264	50223	40.00	ng	0.39

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.86	99	3296	0.43	ng	1.07%
23) Nitrobenzene-d5	12.41	82	1878	0.25	ng	0.63%
45) 2-Fluorobiphenyl	18.33	172	124	0.01	ng	0.02%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
20) N-Nitrosodi-n-propylamine	12.40	70	909428	221.70	ng	m 95
42) Hexachlorocyclopentadiene	17.69	237	244150	200.12	ng	m 97
54) 2,4-Dinitrophenol	21.25	184	161060	102.88	ng	m 87
55) 4-Nitrophenol	23.82	139	293289	82.66	ng	m 0

(#) = qualifier out of range (m) = manual integration

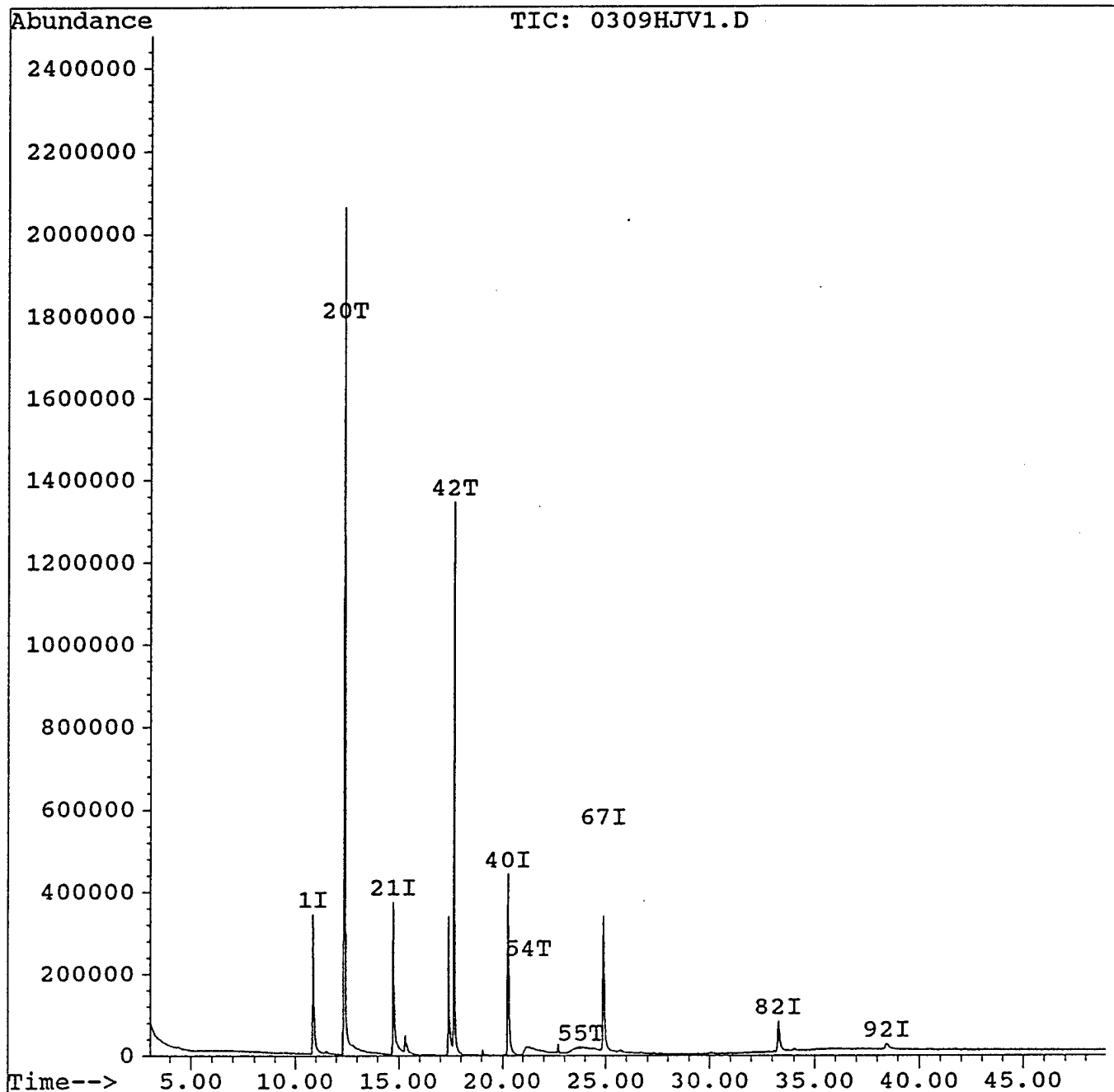


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV1.D  
Acq Time : 9 Mar 94 3:44 am  
Sample : SPCC 200PPM  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:30 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV2.D  
 Acq Time : 9 Mar 94 4:41 am  
 Sample : CCC B/N 100PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:34 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	262461	40.00	ng	0.12
21) Naphthalene-d8	14.74	136	1040819	40.00	ng	0.09
40) Acenaphthene-d10	20.27	164	477816	40.00	ng	0.10
67) Phenanthrene-d10	24.90	188	608927	40.00	ng	0.05
82) Chrysene-d12	33.30	240	114652	40.00	ng	0.17
92) Perylene-d12	38.41	264	36623	40.00	ng	0.36
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.91	99	8273	0.94	ng	2.35%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.33	172	225	0.01	ng	0.03%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%
Target Compounds						Qvalue
13) 1,4-Dichlorobenzene	10.93	146	899850	115.70	ng m	87
36) Hexachlorobutadiene	15.40	225	354220	110.15	ng	98
53) Acenaphthene	20.37	154	1359805	95.33	ng m	96
69) Diphenylamine + N-Nitrosod	22.57	169	875473	51.90	ng m	97
81) Fluoranthene	28.73	202	1188092	81.86	ng m	77
93) Di-n-octylphthalate	35.68	149	526378	105.49	ng m	89
97) Benzo(a)pyrene	38.17	252	145853	85.57	ng m	100

(#) = qualifier out of range (m) = manual integration

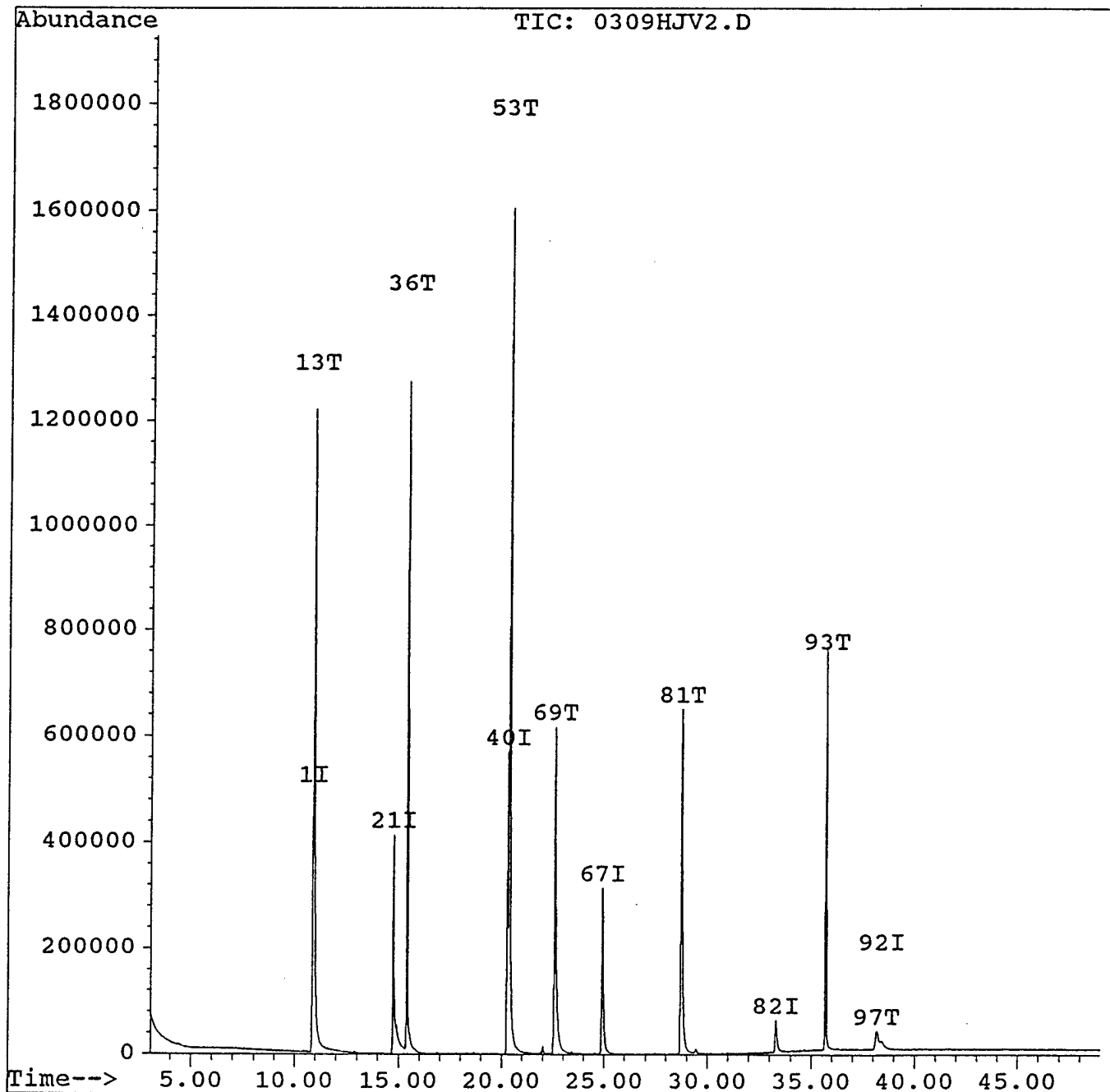


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV2.D  
Acq Time : 9 Mar 94 4:41 am  
Sample : CCC B/N 100PPM  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:34 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV3.D  
 Acq Time : 9 Mar 94 5:39 am  
 Sample : CCC A 100PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:39 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.88	152	254974	40.00	ng	0.12
21) Naphthalene-d8	14.73	136	1071692	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	475030	40.00	ng	0.10
67) Phenanthrene-d10	24.91	188	605621	40.00	ng	0.07
82) Chrysene-d12	33.30	240	143296	40.00	ng	0.17
92) Perylene-d12	38.50	264	44890	40.00	ng	0.44

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.88	99	3690	0.43	ng	1.08%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.32	172	270	0.02	ng	0.04%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
9) Phenol	11.27	94	847231	111.38	ng	m 0
27) 2-Nitrophenol	13.72	139	552440	113.79	ng	# 83
30) 2,4-Dichlorophenol	15.19	162	605512	94.87	ng	m 0
38) 4-Chloro-3-methylphenol	18.30	107	808951	123.37	ng	m 0
43) 2,4,6-Trichlorophenol	18.34	196	349669	97.86	ng	m 0

(#) = qualifier out of range (m) = manual integration

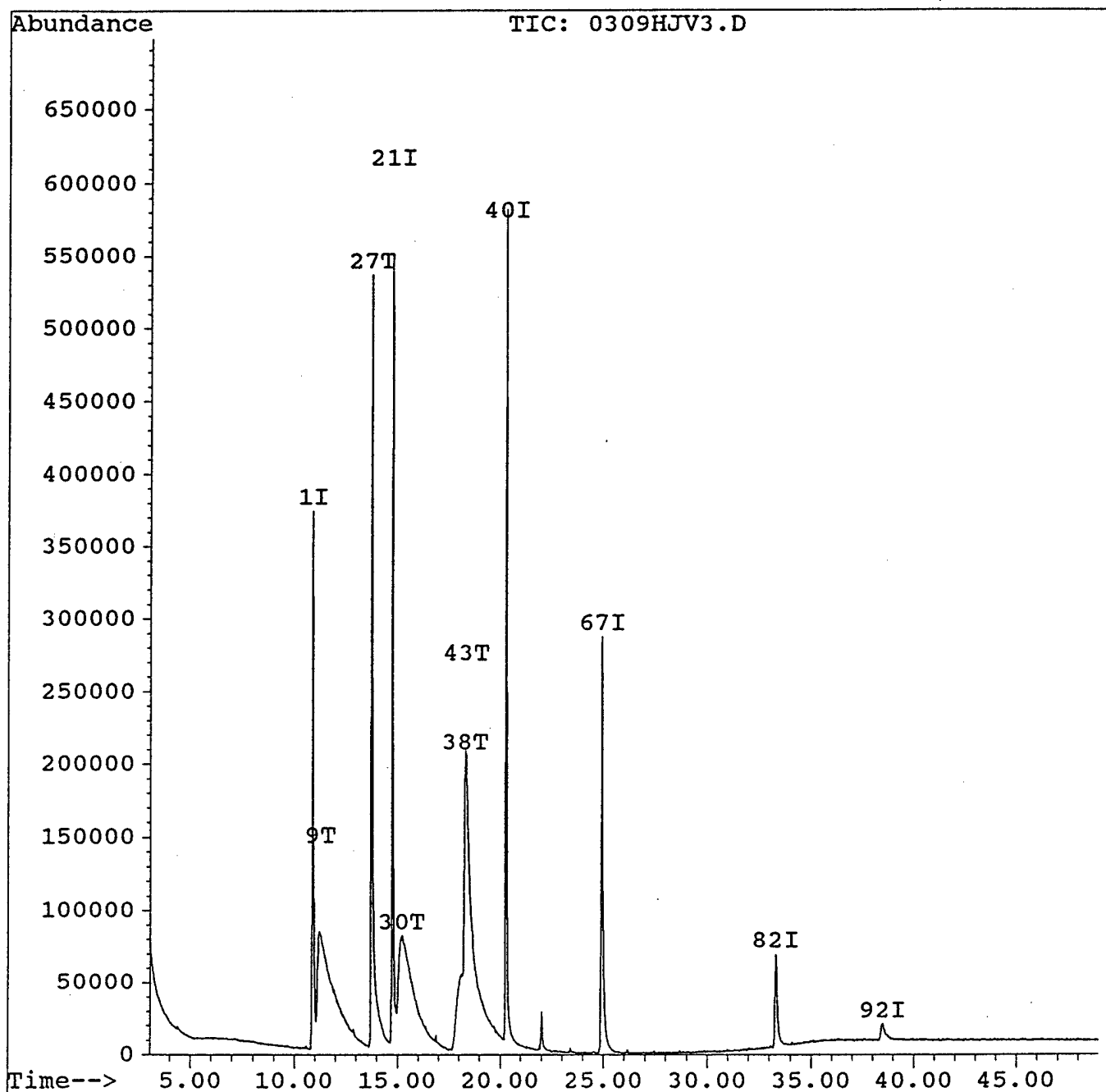


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV3.D  
Acq Time : 9 Mar 94 5:39 am  
Sample : CCC A 100PPM  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:39 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV4.D  
 Acq Time : 9 Mar 94 6:37 am  
 Sample : 9402010542  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:42 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	342218	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	1506390	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	677385	40.00	ng	0.10
67) Phenanthrene-d10	24.89	188	855723	40.00	ng	0.05
82) Chrysene-d12	33.29	240	179813	40.00	ng	0.15
92) Perylene-d12	38.45	264	79012	40.00	ng	0.39

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.16	112	266471	30.71	ng	76.79%
8) Phenol-d5	11.68	99	424780	37.08	ng	92.69%
23) Nitrobenzene-d5	12.68	82	333181	26.27	ng	65.68%
45) 2-Fluorobiphenyl	18.27	172	374838	15.27	ng	38.17%
66) 2,4,6-Tribromophenol	23.39	330	29936	11.96	ng	29.91%
85) Terphenyl-d14	30.06	244	190738	37.02	ng	92.55%

Target Compounds Qvalue

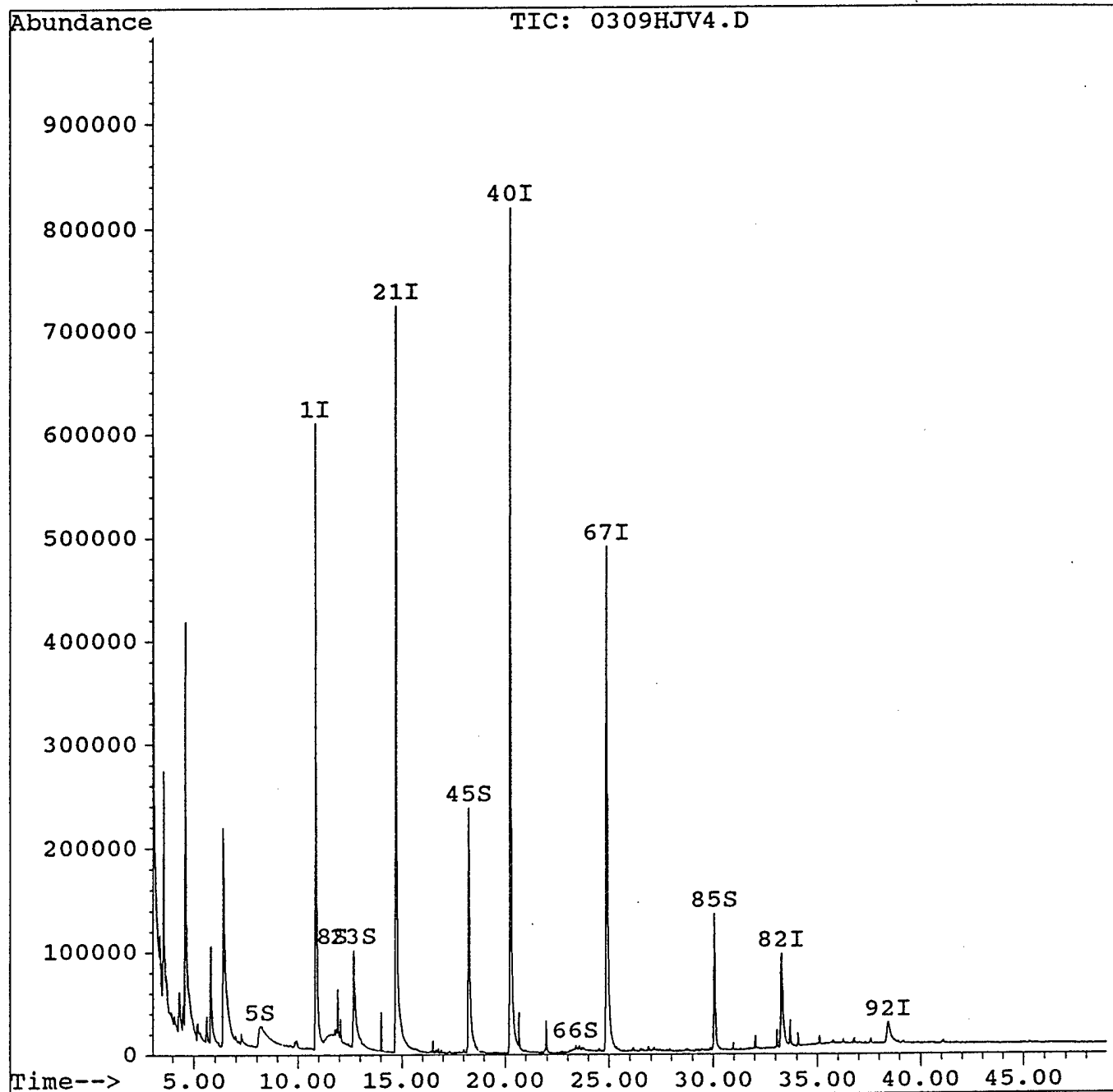


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV4.D  
Acq Time : 9 Mar 94 6:37 am  
Sample : 9402010542  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:42 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV5.D  
 Acq Time : 9 Mar 94 7:34 am  
 Sample : 9402010551  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:46 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	285945	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1166293	40.00	ng	0.06
40) Acenaphthene-d10	20.26	164	530041	40.00	ng	0.10
67) Phenanthrene-d10	24.89	188	662508	40.00	ng	0.05
82) Chrysene-d12	33.28	240	137142	40.00	ng	0.15
92) Perylene-d12	38.45	264	61756	40.00	ng	0.39

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.17	112	258075	35.60	ng	89.00%
8) Phenol-d5	11.61	99	399836	41.77	ng	104.42%
23) Nitrobenzene-d5	12.68	82	379187	38.62	ng	96.54%
45) 2-Fluorobiphenyl	18.25	172	483531	25.17	ng	62.92%
66) 2,4,6-Tribromophenol	23.39	330	32479	16.59	ng	41.47%
85) Terphenyl-d14	30.06	244	180629	45.97	ng	114.92%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
91) Bis(2-ethylhexyl) phthalat	33.70	149	31882	6.45	ng	m 91

wt. of sample = 30.25g % solid = 89.46%

Actual conc.

$$= \frac{6.45 \times 1000}{30.25 \times 0.8946} = 238.35 \text{ PPB.}$$

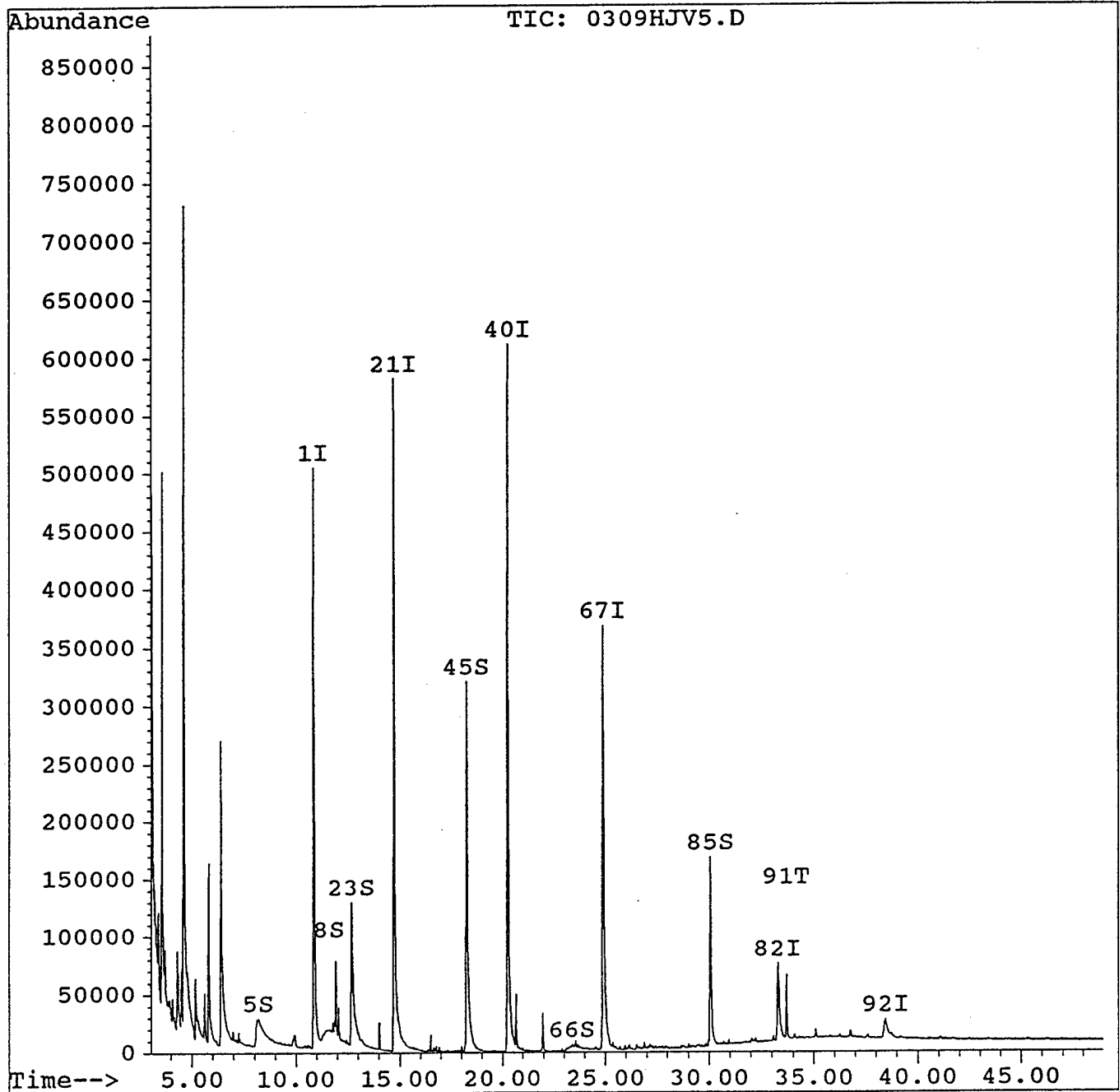


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV5.D  
Acq Time : 9 Mar 94 7:34 am  
Sample : 9402010551  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:46 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV6.D  
 Acq Time : 9 Mar 94 8:31 am  
 Sample : 9402010558  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:50 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	216162	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	861892	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	397635	40.00	ng	0.08
67) Phenanthrene-d10	24.90	188	515258	40.00	ng	0.05
82) Chrysene-d12	33.28	240	98743	40.00	ng	0.15
92) Perylene-d12	38.47	264	42152	40.00	ng	0.41

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.19	112	234730	42.83	ng	107.08%
8) Phenol-d5	11.64	99	320089	44.23	ng	110.58%
23) Nitrobenzene-d5	12.68	82	317450	43.75	ng	109.37%
45) 2-Fluorobiphenyl	18.25	172	442514	30.70	ng	76.76%
66) 2,4,6-Tribromophenol	23.31	330	59209	40.31	ng	100.78%
85) Terphenyl-d14	30.06	244	179133	63.31	ng	158.28%

Target Compounds Qvalue

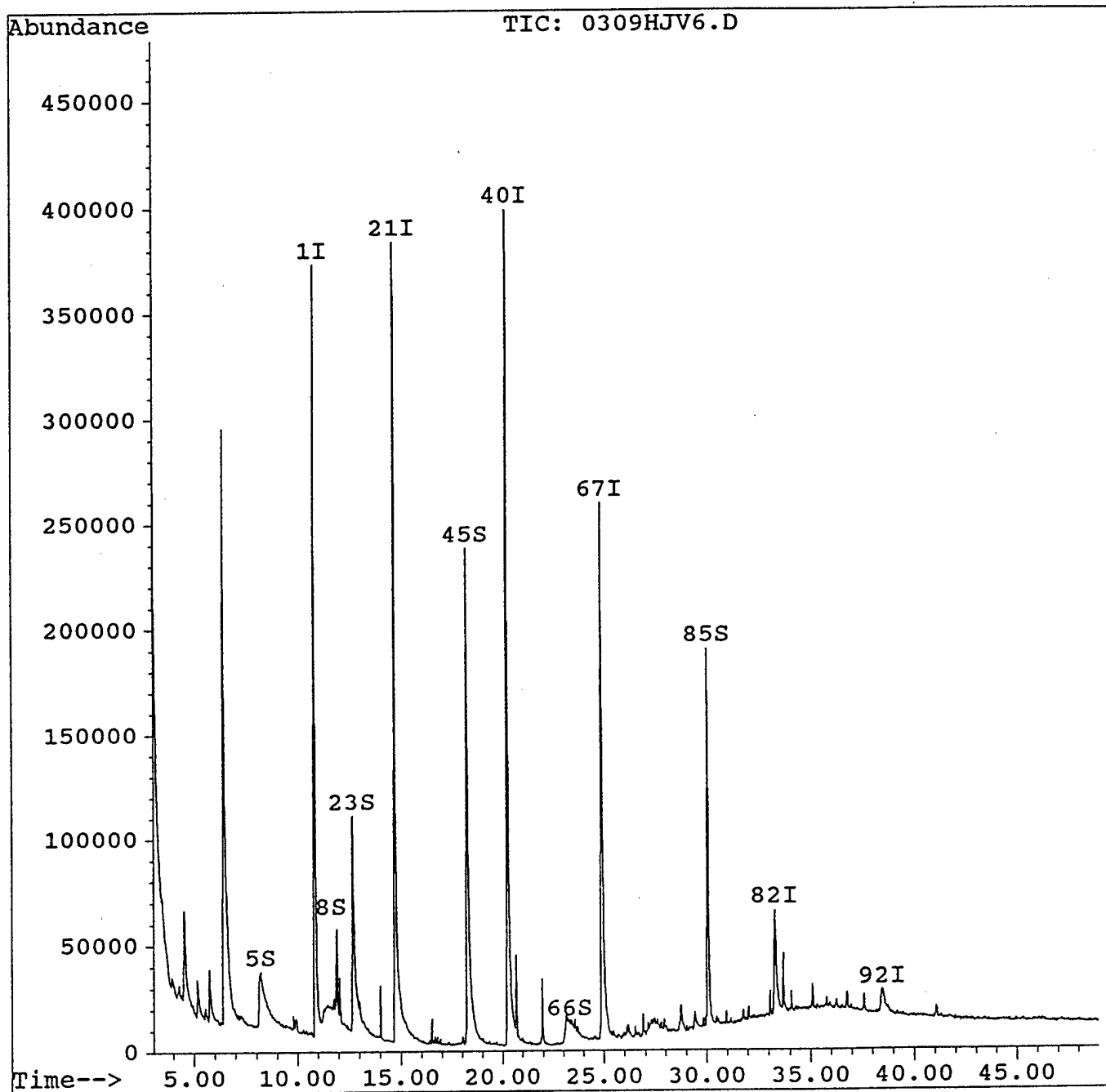


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV6.D  
Acq Time : 9 Mar 94 8:31 am  
Sample : 9402010558  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:50 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV7.D  
 Acq Time : 9 Mar 94 9:29 am  
 Sample : 9402010559  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:55 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	236668	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	864191	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	401659	40.00	ng	0.08
67) Phenanthrene-d10	24.90	188	537399	40.00	ng	0.06
82) Chrysene-d12	33.31	240	106095	40.00	ng	0.18
92) Perylene-d12	38.47	264	42954	40.00	ng	0.41

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.17	112	249639	41.61	ng	104.02%
8) Phenol-d5	11.44	99	336373	42.45	ng	106.14%
23) Nitrobenzene-d5	12.68	82	332847	45.75	ng	114.37%
45) 2-Fluorobiphenyl	18.25	172	452712	31.10	ng	77.74%
66) 2,4,6-Tribromophenol	23.21	330	62563	42.17	ng	105.42%
85) Terphenyl-d14	30.06	244	198904	65.43	ng	163.57%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
81) Fluoranthene	28.74	202	70181	5.48	ng	m 79
84) Pyrene	29.42	202	52264	10.83	ng	m 98

wt. of sample = 31.06 g % solid = 88.11%

Actual conc.

$$C1) \text{ Fluoranthene} = \frac{1000 \times 5.48}{31.06 \times 0.8811} = 200.24 \text{ ppb}$$

$$C2) \text{ Pyrene} = \frac{10.83 \times 1000}{31.06 \times 0.8811} = 395.74 \text{ ppb}$$

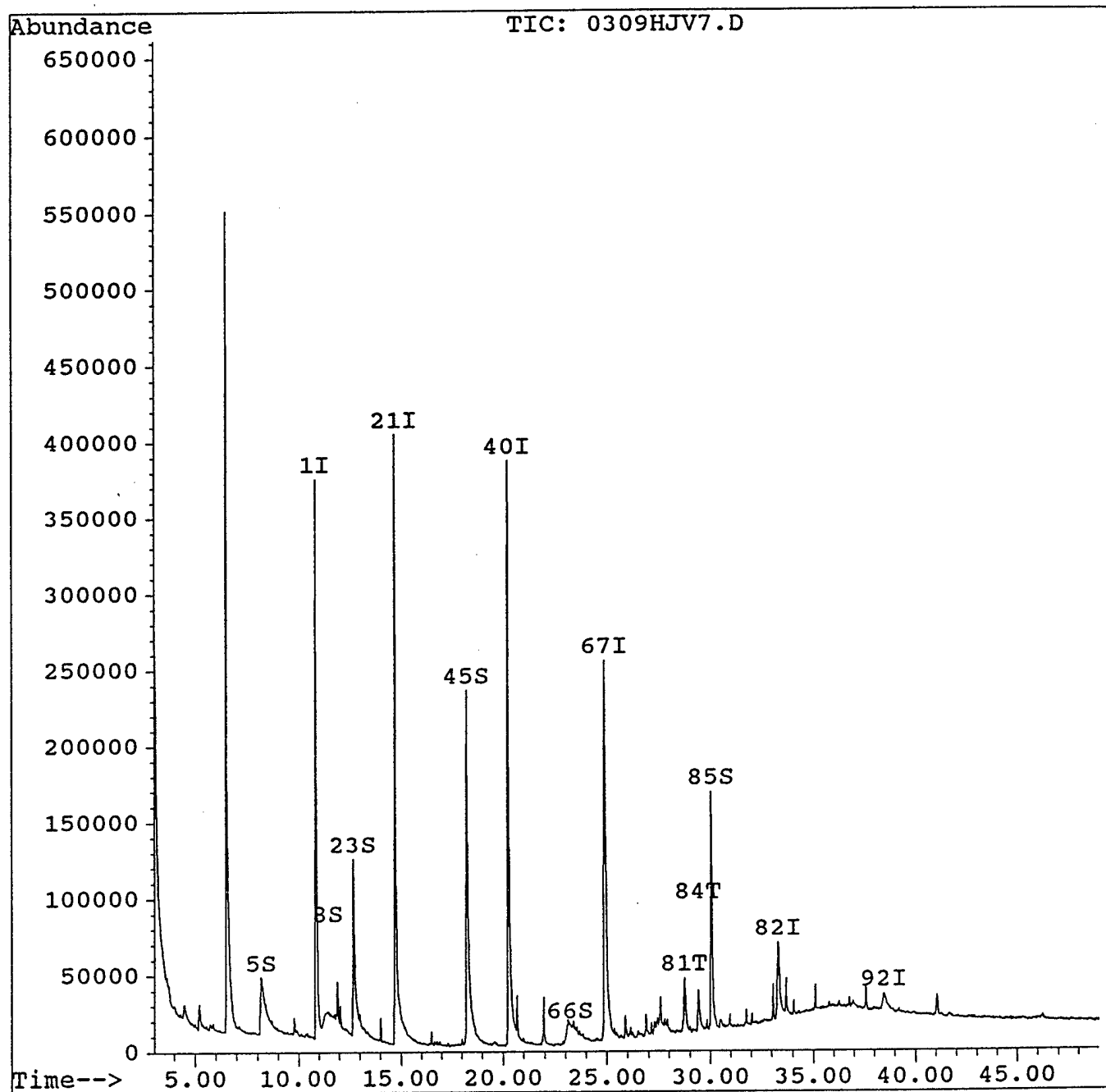


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV7.D  
Acq Time : 9 Mar 94 9:29 am  
Sample : 9402010559  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:55 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV8.D  
 Acq Time : 9 Mar 94 10:26 am  
 Sample : 9402010560  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:59 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	252602	40.00	ng	0.09
21) Naphthalene-d8	14.71	136	935487	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	429226	40.00	ng	0.08
67) Phenanthrene-d10	24.89	188	549649	40.00	ng	0.05
82) Chrysene-d12	33.29	240	115881	40.00	ng	0.16
92) Perylene-d12	38.45	264	47906	40.00	ng	0.39

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.22	112	253276	39.55	ng	98.88%
8) Phenol-d5	11.81	99	360906	42.68	ng	106.69%
23) Nitrobenzene-d5	12.68	82	287773	36.54	ng	91.34%
45) 2-Fluorobiphenyl	18.27	172	381578	24.53	ng	61.32%
66) 2,4,6-Tribromophenol	23.50	330	41501	26.18	ng	65.44%
85) Terphenyl-d14	30.06	244	191521	57.68	ng	144.20%

Target Compounds Qvalue

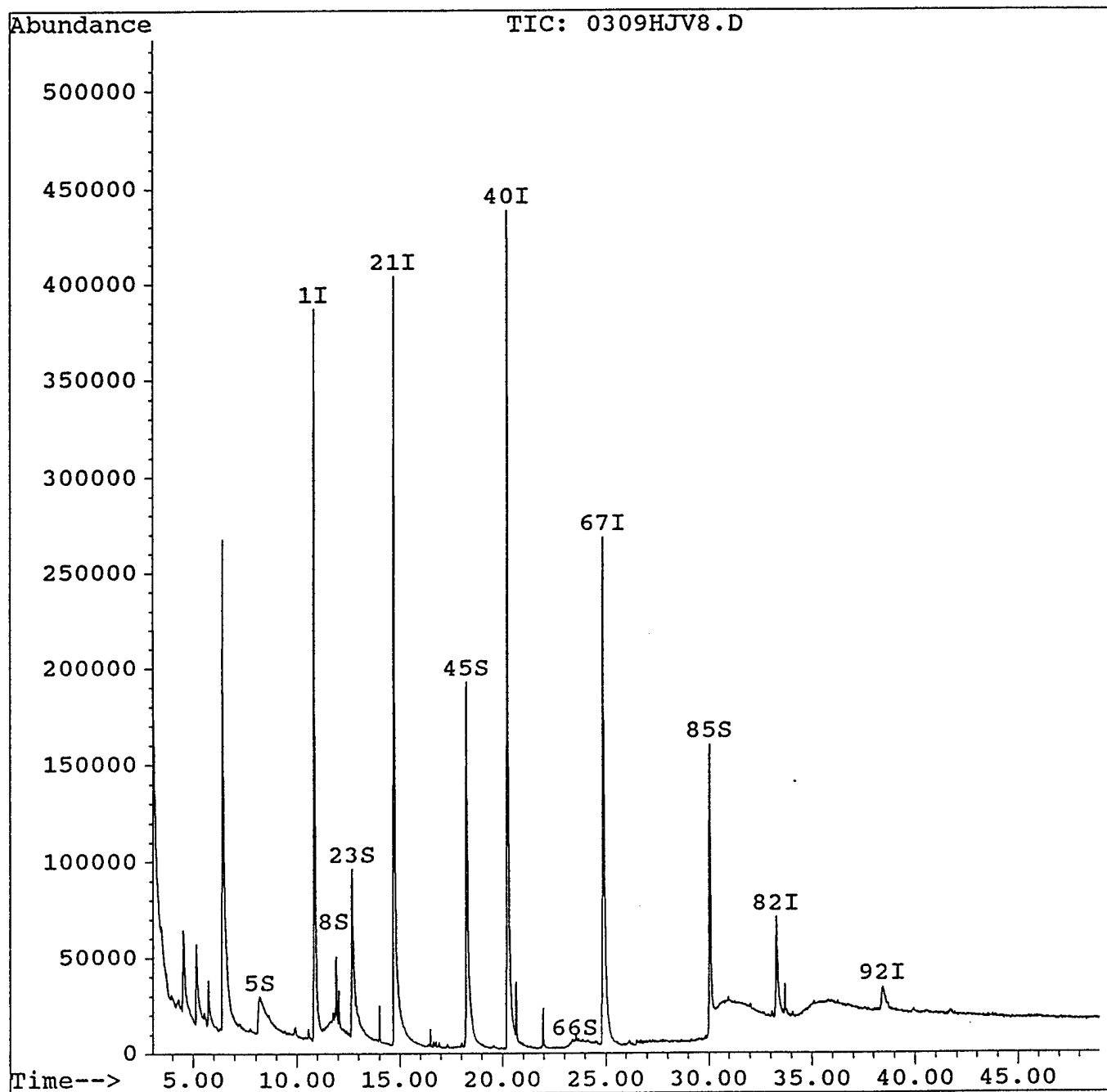


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV8.D  
Acq Time : 9 Mar 94 10:26 am  
Sample : 9402010560  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:59 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration



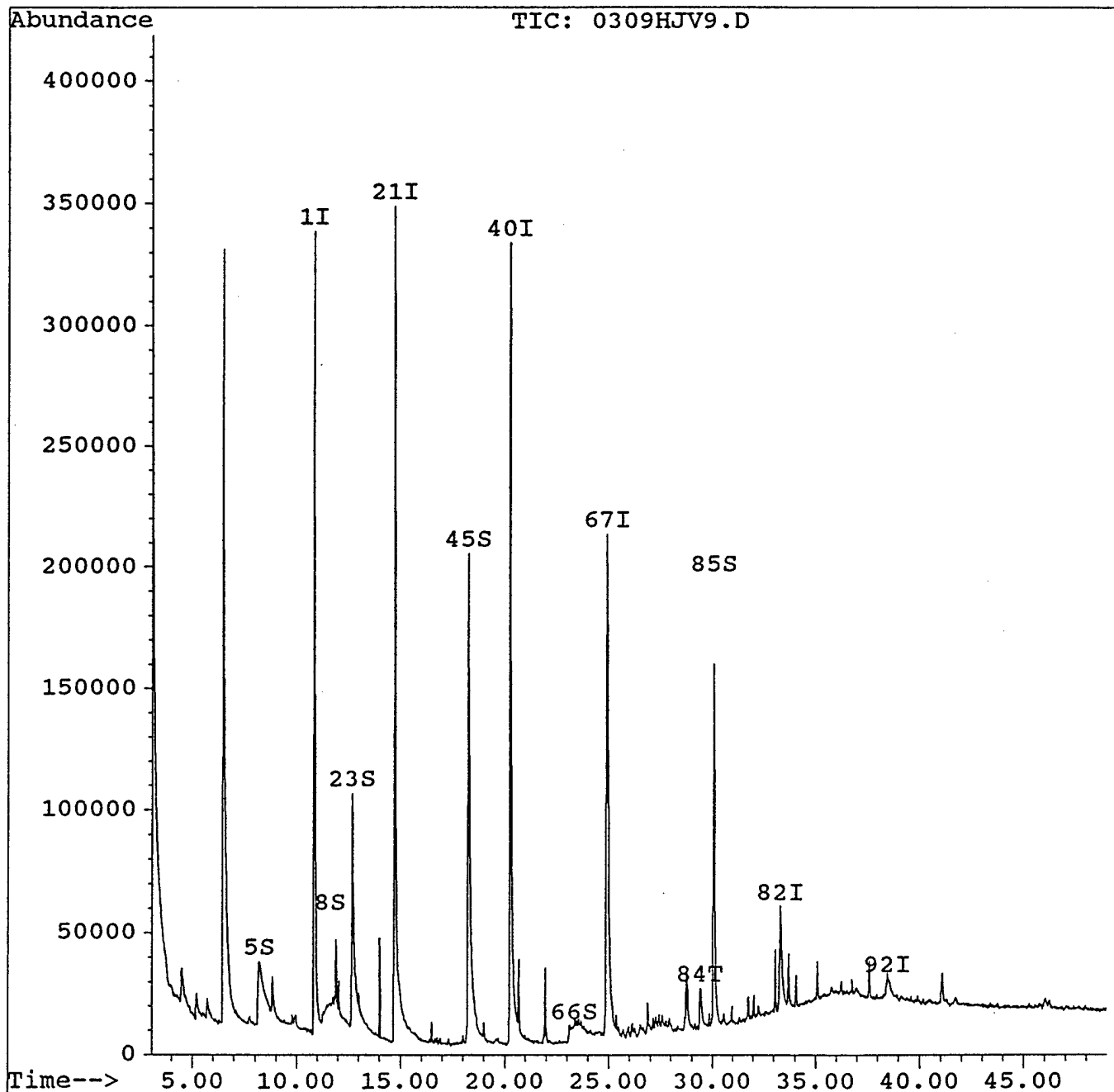


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV9.D  
Acq Time : 9 Mar 94 11:24 am  
Sample : 9402010561  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 23:03 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HJV9.D  
 Acq Time : 9 Mar 94 11:24 am  
 Sample : 9402010561  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 23:03 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(M
1) 1,4-Dichlorobenzene-d4	10.85	152	212531	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	768678	40.00	ng	0.06
40) Acenaphthene-d10	20.25	164	351759	40.00	ng	0.06
67) Phenanthrene-d10	24.90	188	469478	40.00	ng	0.06
82) Chrysene-d12	33.31	240	93844	40.00	ng	0.18
92) Perylene-d12	38.45	264	36219	40.00	ng	0.1
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.20	112	228445	42.40	ng	106.00
8) Phenol-d5	11.63	99	298867	42.00	ng	105.00
23) Nitrobenzene-d5	12.68	82	253403	39.16	ng	97.89
45) 2-Fluorobiphenyl	18.25	172	419161	32.88	ng	82.19
66) 2,4,6-Tribromophenol	23.34	330	49211	37.87	ng	94.00
85) Terphenyl-d14	30.06	244	181088	67.35	ng	168.33
Target Compounds						Quality
84) Pyrene	29.42	202	30828	7.22	ng	m

wt. of sample = 30.37 g      % solid = 91.92 %

Actual conc. =

$$\text{C(17)Pyrene} = \frac{7.22 \times 1000}{30.37 \times 0.9192} = 258.63 \text{ ppb.}$$



## Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV10.D  
 Acq Time : 9 Mar 94 12:21 pm  
 Sample : 9402010562  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 23:13 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	220314	40.00	ng	0.10
21) Naphthalene-d8	14.72	136	929990	40.00	ng	0.07
40) Acenaphthene-d10	20.26	164	405433	40.00	ng	0.10
67) Phenanthrene-d10	24.98	188	503254	40.00	ng	0.14
82) Chrysene-d12	33.33	240	111528	40.00	ng	0.20
92) Perylene-d12	38.41	264	45566	40.00	ng	0.35

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.26	112	208959	37.41	ng	93.53%
8) Phenol-d5	11.76	99	304534	41.29	ng	103.22%
23) Nitrobenzene-d5	12.67	82	312559	39.92	ng	99.80%
45) 2-Fluorobiphenyl	18.25	172	423176	28.80	ng	71.99%
66) 2,4,6-Tribromophenol	24.31	330	38365	25.62	ng	64.04%
85) Terphenyl-d14	30.11	244	207593	64.96	ng	162.40%

Target Compounds						Qvalue
32) Naphthalene	14.77	128	1208122	52.81	ng	m 100
39) 2-Methylnaphthalene	16.96	142	290527	20.37	ng	93
53) Acenaphthene	20.36	154	1347243	111.32	ng	98
56) Dibenzofuran	20.88	168	864935	46.54	ng	m 87
62) Fluorene	21.98	166	1314768	107.54	ng	99
78) Phenanthrene	25.13	178	16760355	1293.86	ng	96
79) Anthracene	25.13	178	4629592	396.03	ng	98
81) Fluoranthene	28.95	202	17783360	1482.55	ng	# 90
84) Pyrene	29.60	202	11425285	2252.74	ng	m 99
88) Benzo(a)anthracene	33.28	228	1662679	525.43	ng	m 95
90) Chrysene	33.43	228	1922960	744.71	ng	96
91) Bis(2-ethylhexyl) phthalat	33.72	149	182635	45.47	ng	m 90
94) Benzo(b)fluoranthene	36.94	252	1625986	311.81	ng	96
95) Benzo(k)fluoranthene	37.94	252	448771	225.21	ng	m 98
97) Benzo(a)pyrene	38.16	252	585908	276.28	ng	m 75
100) Indeno(1,2,3-cd)pyrene	44.23	276	318614	151.36	ng	m 81
102) Benzo(g,h,i)perylene	45.96	276	269802	187.58	ng	m 95

wt. of sample = 31.14g % solid = 63.25 %  
 MF = 50.77

(32) 2 681.25 ppb.	(79) 6 5689.27 ppb	(91) 2308.51 ppb
(39) 1034.18 ppb	(79) 20106.44 ppb	(94) 15830.59 ppb
(53) 5651.72 ppb.	(81) 75269.06 ppb	(95) 11433.92 ppb
(56) 2362.84 ppb	(84) 114371.61 ppb	(97) 14026.74 ppb
(62) 5459.81 ppb	(88) 26676.08 ppb	(100) 7684.55 ppb
	(90) 37808.93 ppb	(102) 9523.44 ppb.

(#) = qualifier out of range (m) = manual integration

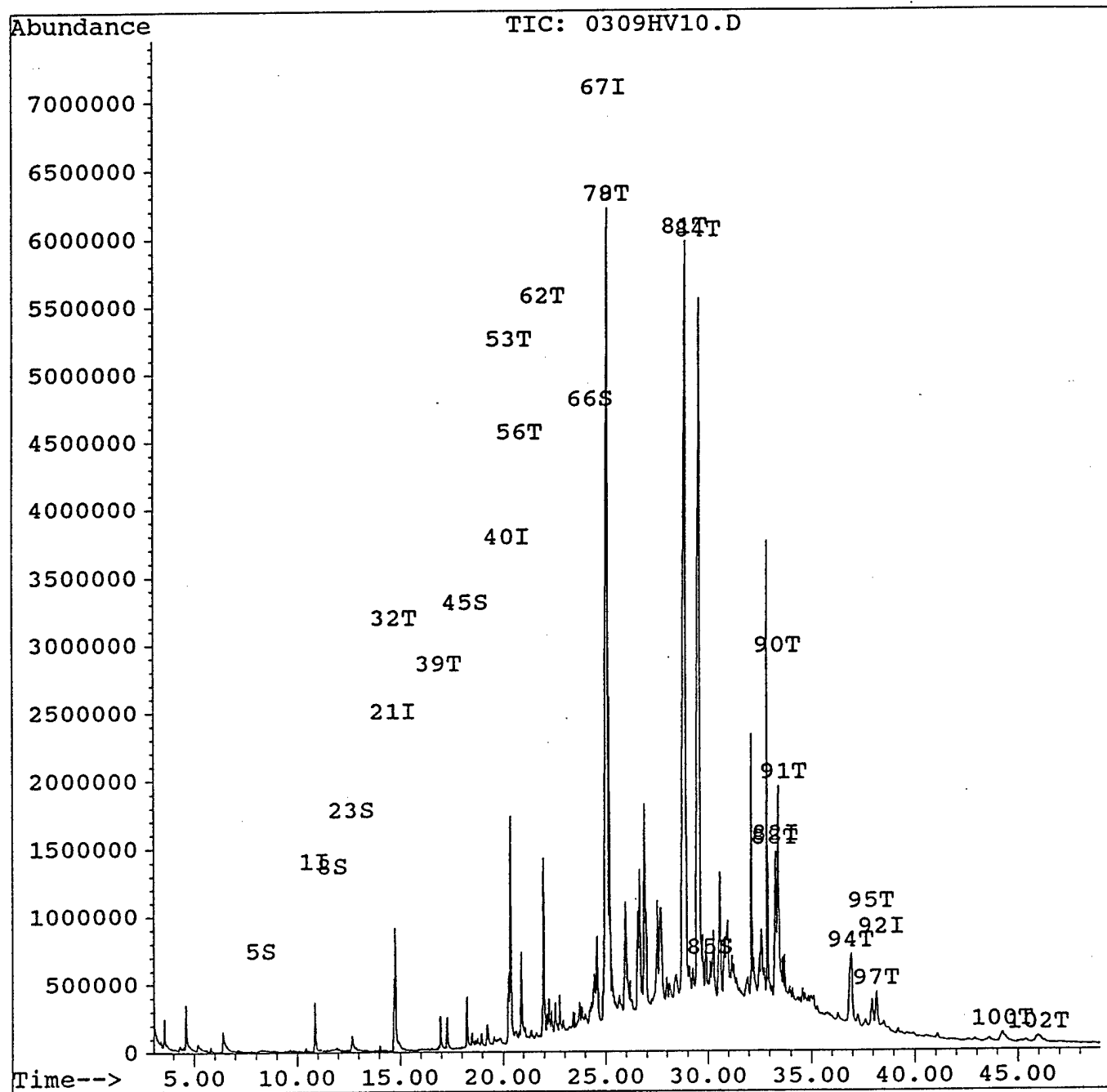


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV10.D  
Acq Time : 9 Mar 94 12:21 pm  
Sample : 9402010562  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 23:13 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV11.D  
 Acq Time : 9 Mar 94 1:19 pm  
 Sample : 9402010563  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 23:25 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	213695	40.00	ng	0.10
21) Naphthalene-d8	14.72	136	825410	40.00	ng	0.07
40) Acenaphthene-d10	20.26	164	370871	40.00	ng	0.10
67) Phenanthrene-d10	24.97	188	482553	40.00	ng	0.12
82) Chrysene-d12	33.32	240	108224	40.00	ng	0.18
92) Perylene-d12	38.42	264	41087	40.00	ng	0.36

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	8.27	112	221731	40.93	ng	102.32%
8) Phenol-d5	11.59	99	315085	44.04	ng	110.11%
23) Nitrobenzene-d5	12.68	82	261628	37.65	ng	94.12%
45) 2-Fluorobiphenyl	18.25	172	369326	27.48	ng	68.69%
66) 2,4,6-Tribromophenol	24.15	330	52573	38.38	ng	95.94%
85) Terphenyl-d14	30.11	244	163951	52.87	ng	132.18%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
32) Naphthalene	14.78	128	246158	12.12	ng	99
39) 2-Methylnaphthalene	16.96	142	66539	5.26	ng	97
53) Acenaphthene	20.35	154	475568	42.96	ng	97
56) Dibenzofuran	20.88	168	520032	30.59	ng	89
62) Fluorene	21.96	166	637708	57.02	ng	99
78) Phenanthrene	25.12	178	13303495	1071.05	ng	96
79) Anthracene	25.12	178	11923442	1063.72	ng	m 83
81) Fluoranthene	28.94	202	14497556	1260.47	ng	# 90
84) Pyrene	29.59	202	8832064	1794.60	ng	m 99
88) Benzo(a)anthracene	33.29	228	1234197	401.93	ng	m 93
90) Chrysene	33.42	228	1589015	634.17	ng	m 96
91) Bis(2-ethylhexyl) phthalat	33.72	149	241274	61.90	ng	m 91
94) Benzo(b)fluoranthene	36.93	252	1485494	315.92	ng	97
95) Benzo(k)fluoranthene	37.97	252	422544	235.16	ng	m 97
97) Benzo(a)pyrene	38.17	252	544769	284.89	ng	m 74
100) Indeno(1,2,3-cd)pyrene	44.27	276	369810	194.83	ng	m 83
101) Dibenz(a,h)anthracene	44.44	278	131716	93.95	ng	m 85
102) Benzo(g,h,i)perylene	46.01	276	311612	240.27	ng	m 93

sample wt = 30.98, % solid = 68.50%, HF = 47.12

(32) 571.12 ppb (79) 50122.49 ppb (94) 14886.15 ppb  
 (39) 247.95 ppb (81) 59393.35 ppb (95) 11080.74 ppb  
 (53) 2024.26 ppb (84) 84561.55 ppb (97) 13424.02 ppb  
 (56) 1441.40 ppb (88) 18938.94 ppb (100) 9180.39 ppb  
 (62) 2686.78 ppb (90) 29882.09 ppb (101) 4426.92 ppb  
 (78) 50467.88 ppb (91) 2916.728 (102) 11321.52 ppb

(#) = qualifier out of range (m) = manual integration

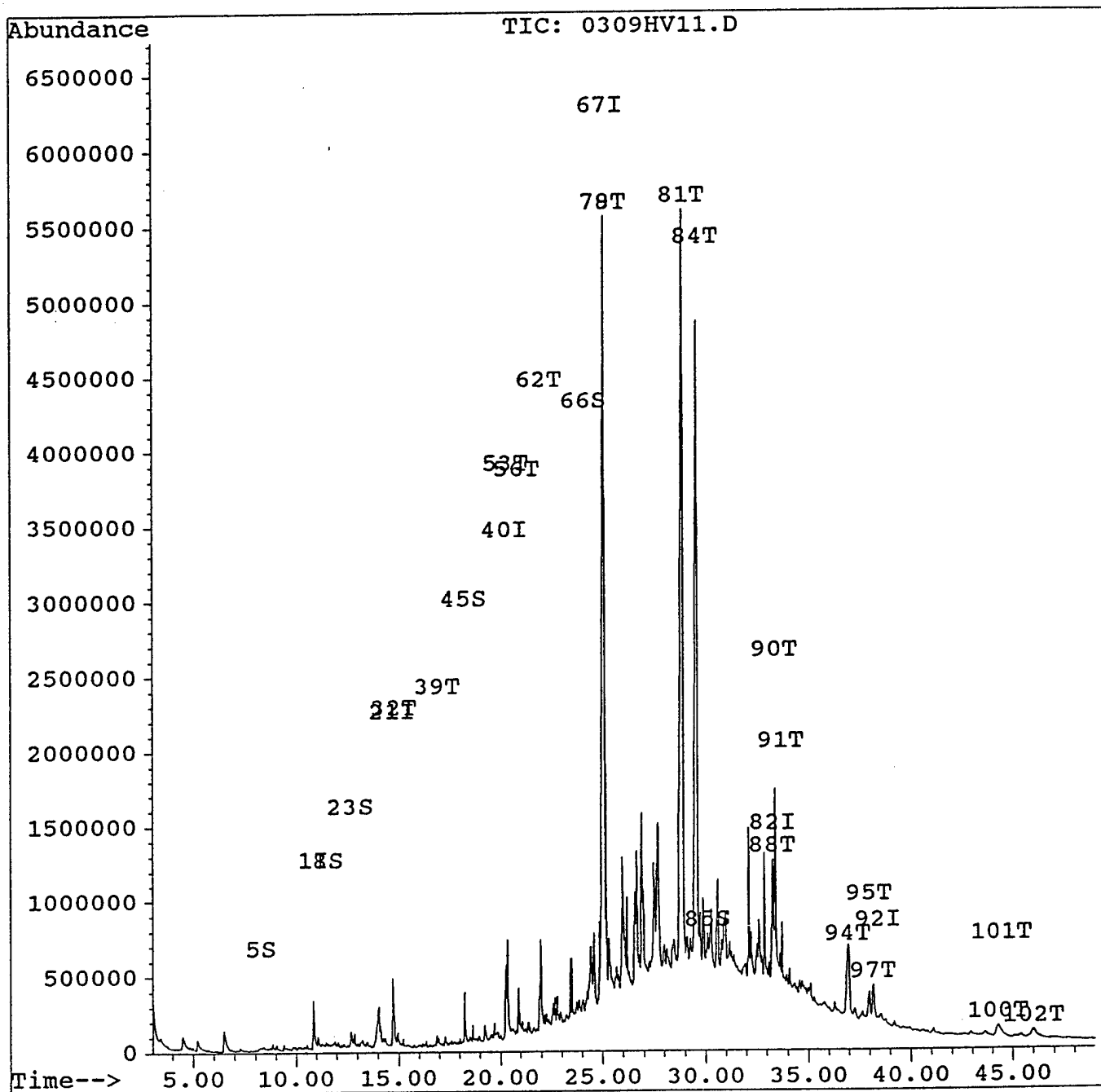


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\030994\0309HV11.D  
 Acq Time : 9 Mar 94 1:19 pm  
 Sample : 9402010563  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 23:25 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration





# SEQUENCE.LOG

Simulate Run Sequence Sun Mar 06 16:43:20 1994

Sequence Name: C:\HPCHEM\1\SEQUENCE\0308SV.S

Comment:

Operator: HJV

Data Path: C:\HPCHEM\1\DATA\0308942\

Method Path: C:\HPCHEM\1\METHODS\

Line Type	Vial	DataFile	Method	Sample Name
1) Sample	1	0308HV1	8270	40 PPM SURR. STD.
2) Sample	2	0308HV2	8270	CCC B/N 100PPM
3) Sample	3	0308HV3	8270	CCC A 100PPM
4) Sample	4	0308HV4	8270	9402010552
5) Sample	5	0308HV5	8270	9402010553
6) Sample	6	0308HV6	8270	9402010554
7) Sample	7	0308HV7	8270	9402010555
8) Sample	8	0308HV8	8270	9402010556
9) Sample	9	0308HV9	8270	9402010557

Bytes Needed: 450000 Space on drive C: 9715712

Sequence Verification Done!



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV1.D  
 Acq Time : 6 Mar 94 4:51 pm  
 Sample : 40 PPM SURR. STD.  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:35 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	262121	40.00	ng	0.12
21) Naphthalene-d8	14.73	136	918291	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	478513	40.00	ng	0.11
67) Phenanthrene-d10	24.91	188	512489	40.00	ng	0.08
82) Chrysene-d12	33.40	240	55551	40.00	ng	0.26
92) Perylene-d12	38.65	264	9002	40.00	ng	0.59
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.26	112	289834	43.62	ng	109.04%
8) Phenol-d5	11.42	99	372981	42.50	ng	106.13%
23) Nitrobenzene-d5	12.69	82	366523	47.41	ng	118.32%
45) 2-Fluorobiphenyl	18.26	172	681058	39.27	ng	98.17%
66) 2,4,6-Tribromophenol	23.30	330	20458	11.57	ng	28.94%
85) Terphenyl-d14	30.09	244	130270	81.84	ng	204.11%

Target Compounds

Qvalue

(#) = qualifier out of range (m) = manual integration

0308HV1.D 8270.M

Wed Mar 09 21:36:46 1994

GC/MS

Page

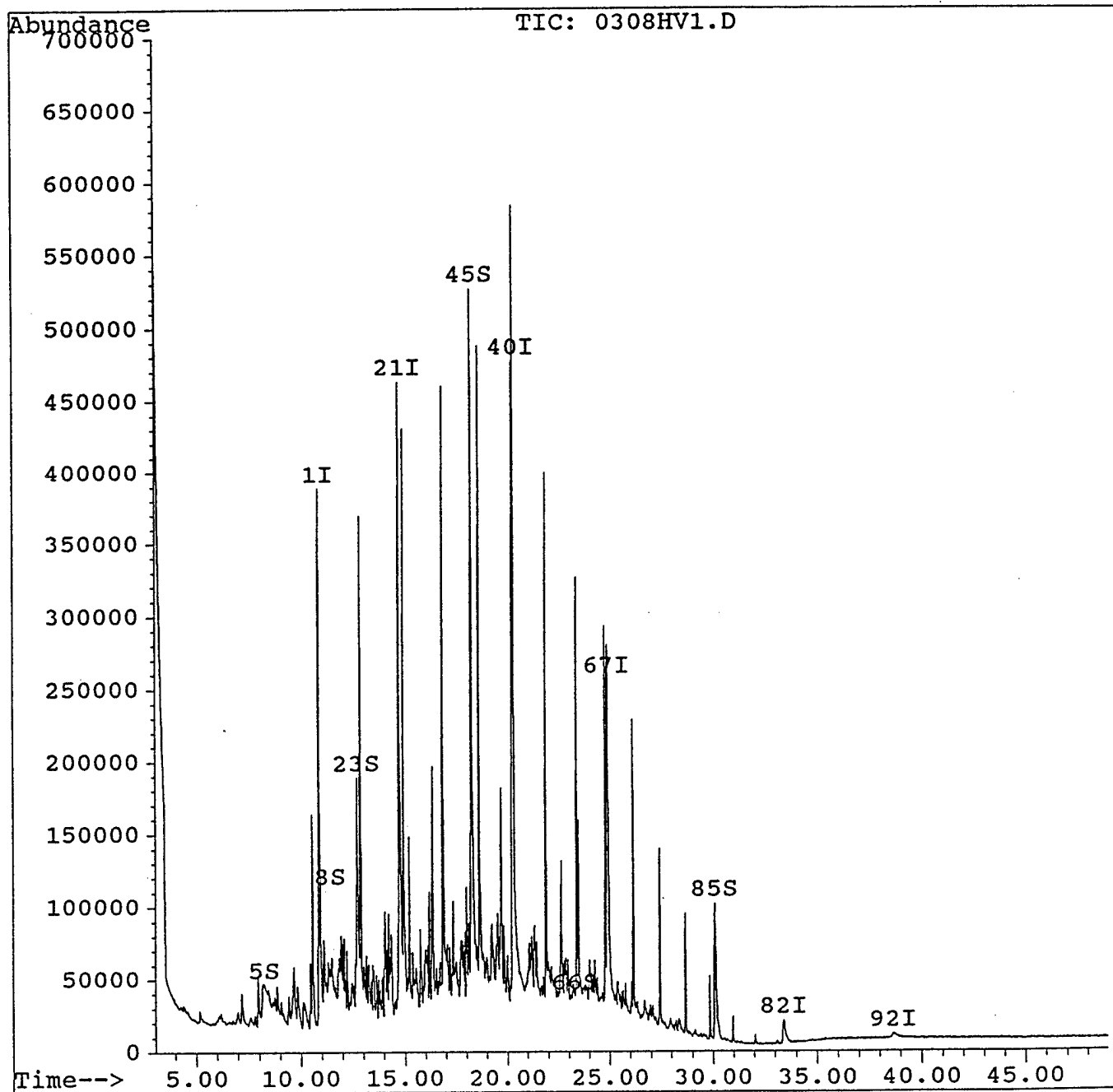


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV1.D  
Acq Time : 6 Mar 94 4:51 pm  
Sample : 40 PPM SURR. STD.  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:35 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV2.D  
 Acq Time : 6 Mar 94 5:48 pm  
 Sample : CCC B/N 100PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:40 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625.  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	325804	40.00	ng	0.11
21) Naphthalene-d8	14.73	136	1128241	40.00	ng	0.07
40) Acenaphthene-d10	20.26	164	635946	40.00	ng	0.0
67) Phenanthrene-d10	24.92	188	693827	40.00	ng	0.0
82) Chrysene-d12	33.33	240	89247	40.00	ng	0.20
92) Perylene-d12	38.51	264	23575	40.00	ng	0.4

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.91	99	8599	0.79	ng	1.9%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.33	172	514	0.02	ng	0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
13) 1,4-Dichlorobenzene	10.91	146	1119917	116.00	ng	9
36) Hexachlorobutadiene	15.40	225	404915	116.15	ng	m 98
53) Acenaphthene	20.36	154	1619660	85.32	ng	m 100
69) Diphenylamine + N-Nitrosod	22.57	169	898454	46.75	ng	m 9
81) Fluoranthene	28.73	202	1140335	68.95	ng	m 9
93) Di-n-octylphthalate	35.68	149	365720	113.85	ng	m 89
97) Benzo(a)pyrene	38.27	252	108929	99.28	ng	m 8

(#) = qualifier out of range (m) = manual integration



# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV2.D  
 Acq Time : 6 Mar 94 5:48 pm  
 Sample : CCC B/N 100PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:40 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	325804	40.00	ng	0.11
21) Naphthalene-d8	14.73	136	1128241	40.00	ng	0.07
40) Acenaphthene-d10	20.26	164	635946	40.00	ng	0.09
67) Phenanthrene-d10	24.92	188	693827	40.00	ng	0.07
82) Chrysene-d12	33.33	240	89247	40.00	ng	0.20
92) Perylene-d12	38.51	264	23575	40.00	ng	0.45

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.91	99	8599	0.79	ng	1.97%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.33	172	514	0.02	ng	0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds						Qvalue
13) 1,4-Dichlorobenzene	10.91	146	1119917	116.00	ng	99
36) Hexachlorobutadiene	15.40	225	404915	116.15	ng	m 98
53) Acenaphthene	20.36	154	1619660	85.32	ng	m 100
69) Diphenylamine + N-Nitrosod	22.57	169	898454	46.75	ng	m 98
81) Fluoranthene	28.73	202	1140335	68.95	ng	m 96
93) Di-n-octylphthalate	35.68	149	365720	113.85	ng	m 89
97) Benzo(a)pyrene	38.27	252	108929	99.28	ng	m 80

(#) = qualifier out of range (m) = manual integration

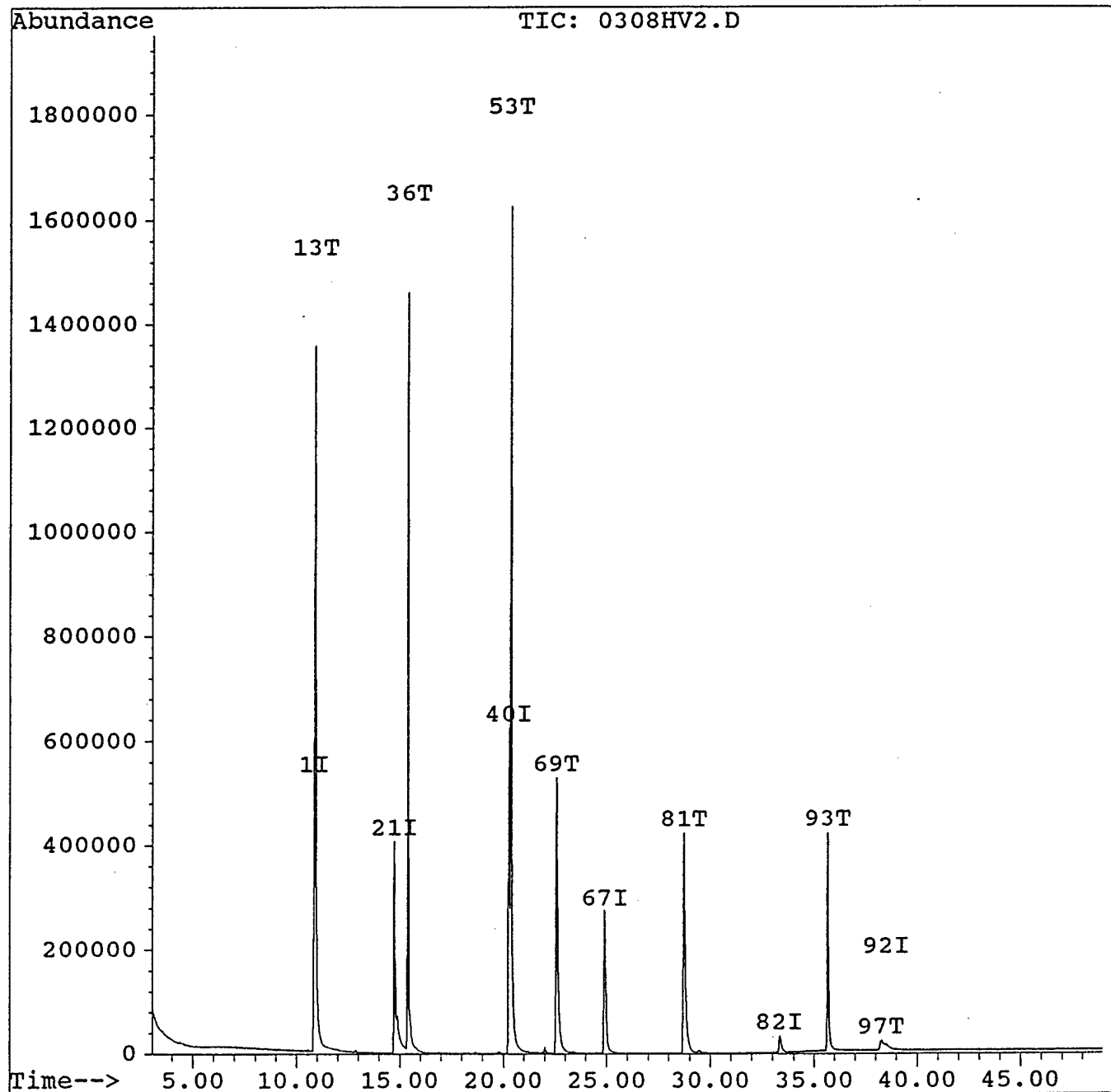


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV2.D  
Acq Time : 6 Mar 94 5:48 pm  
Sample : CCC B/N 100PPM  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:40 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV3.D  
 Acq Time : 6 Mar 94 6:46 pm  
 Sample : CCC A 100PPM  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:49 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	341737	40.00	ng	0.10
21) Naphthalene-d8	14.73	136	1220260	40.00	ng	0.08
40) Acenaphthene-d10	20.26	164	651440	40.00	ng	0.09
67) Phenanthrene-d10	24.93	188	652658	40.00	ng	0.08
82) Chrysene-d12	33.39	240	91350	40.00	ng	0.26
92) Perylene-d12	38.68	264	23679	40.00	ng	0.62

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	%Recovery
5) 2-Fluorophenol	0.00	112	0	0.00	ng	0.00%
8) Phenol-d5	10.86	99	4070	0.36	ng	0.89%
23) Nitrobenzene-d5	0.00	82	0	0.00	ng	0.00%
45) 2-Fluorobiphenyl	18.32	172	565	0.02	ng	0.06%
66) 2,4,6-Tribromophenol	0.00	330	0	0.00	ng	0.00%
85) Terphenyl-d14	0.00	244	0	0.00	ng	0.00%

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
9) Phenol	11.21	94	1092208	107.13	ng	m 0
27) 2-Nitrophenol	13.72	139	573782	103.79	ng	# 83
30) 2,4-Dichlorophenol	15.19	162	670997	92.33	ng	m 0
38) 4-Chloro-3-methylphenol	17.77	107	706831	94.67	ng	m 0
43) 2,4,6-Trichlorophenol	18.30	196	467019	95.31	ng	m 0

(#) = qualifier out of range (m) = manual integration

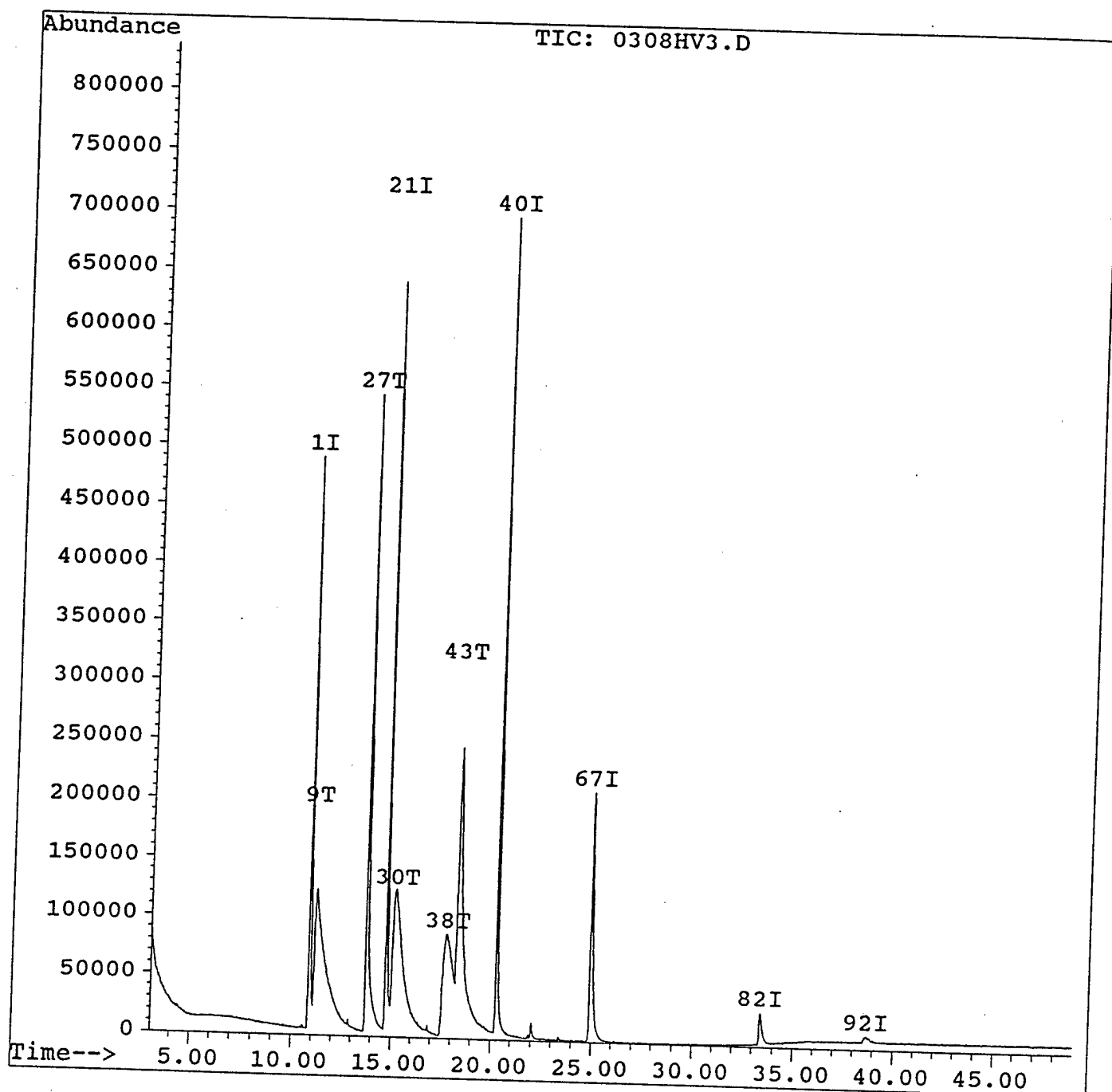


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV3.D  
Acq Time : 6 Mar 94 6:46 pm  
Sample : CCC A 100PPM  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:49 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV4.D  
 Acq Time : 6 Mar 94 7:43 pm  
 Sample : 9402010552  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 21:53 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	293393	40.00	ng	0.09
21) Naphthalene-d8	14.73	136	985225	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	550687	40.00	ng	0.10
67) Phenanthrene-d10	24.92	188	559515	40.00	ng	0.08
82) Chrysene-d12	33.38	240	82877	40.00	ng	0.24
92) Perylene-d12	38.63	264	31962	40.00	ng	0.57

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.27	112	294300	39.57	ng	98.92%
8) Phenol-d5	11.66	99	397402	40.46	ng	101.15%
23) Nitrobenzene-d5	12.68	82	328589	39.61	ng	99.03%
45) 2-Fluorobiphenyl	18.27	172	623580	31.24	ng	78.11%
66) 2,4,6-Tribromophenol	23.49	330	21005	10.33	ng	25.82%
85) Terphenyl-d14	30.11	244	120898	50.91	ng	127.28%

Target Compounds Qvalue

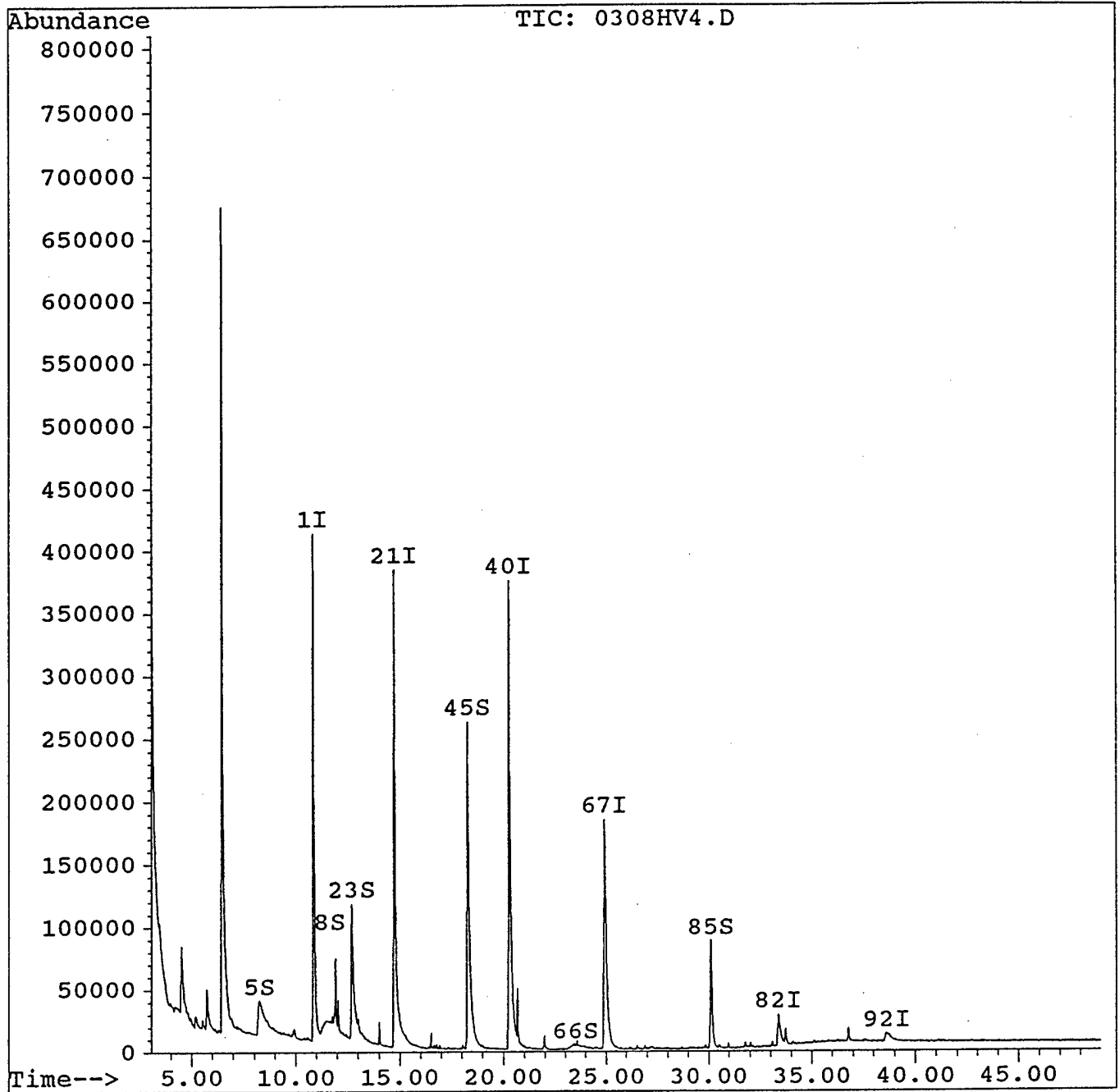


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV4.D  
Acq Time : 6 Mar 94 7:43 pm  
Sample : 9402010552  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 21:53 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV5.D  
 Acq Time : 6 Mar 94 8:40 pm  
 Sample : 9402010553  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:03 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	299437	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	1020912	40.00	ng	0.07
40) Acenaphthene-d10	20.25	164	594372	40.00	ng	0.08
67) Phenanthrene-d10	24.88	188	768463	40.00	ng	0.04
82) Chrysene-d12	33.25	240	190860	40.00	ng	0.12
92) Perylene-d12	38.39	264	89189	40.00	ng	0.34

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.26	112	228209	30.06	ng	75.16%
8) Phenol-d5	11.60	99	328957	32.82	ng	82.04%
23) Nitrobenzene-d5	12.69	82	276146	32.13	ng	80.32%
45) 2-Fluorobiphenyl	18.26	172	491549	22.82	ng	57.04%
66) 2,4,6-Tribromophenol	23.32	330	43589	19.85	ng	49.63%
85) Terphenyl-d14	30.05	244	254793	46.59	ng	116.48%

Target Compounds						Qvalue
53) Acenaphthene	20.35	154	95312	5.37	ng	97
78) Phenanthrene	24.97	178	1235474	62.46	ng	97
79) Anthracene	25.10	178	245845	13.77	ng	98
81) Fluoranthene	28.73	202	2067316	112.87	ng	98
84) Pyrene	29.40	202	1558817	179.60	ng	m 99
88) Benzo(a)anthracene	33.22	228	263162	48.60	ng	m 95
90) Chrysene	33.34	228	335648	75.96	ng	97
91) Bis(2-ethylhexyl) phthalat	33.71	149	243883	35.48	ng	m 97
94) Benzo(b)fluoranthene	36.86	252	362036	35.47	ng	m 94
95) Benzo(k)fluoranthene	37.91	252	118489	30.38	ng	m 72
97) Benzo(a)pyrene	38.13	252	127220	30.65	ng	m 72
100) Indeno(1,2,3-cd)pyrene	44.20	276	92031	22.34	ng	m 76
102) Benzo(g,h,i)perylene	45.97	276	81778	29.05	ng	m 40

Actual conc.      wt. of sample = 30.61g      % solid = 91.51%      35-2

$$(53) \quad \frac{5.37 \times 1000}{30.61 \times 0.9151} = 191.7 \text{ ppb}$$

$$(78) \quad 2229.82 \text{ ppb}$$

$$(91) \quad 1266.64 \text{ ppb}$$

$$(79) \quad 491.60 \text{ ppb}$$

$$(94) \quad 1266.28 \text{ ppb}$$

$$(81) \quad 4029.46 \text{ ppb}$$

$$(95) \quad 1084.57 \text{ ppb}$$

$$(84) \quad 6411.72 \text{ ppb}$$

$$(97) \quad 1094.21 \text{ ppb}$$

$$(88) \quad 1735.02 \text{ ppb}$$

$$(100) \quad 797.54 \text{ ppb}$$

$$(90) \quad 2711.77 \text{ ppb}$$

$$(102) \quad 1037.09 \text{ ppb}$$

(#) = qualifier out of range (m) = manual integration

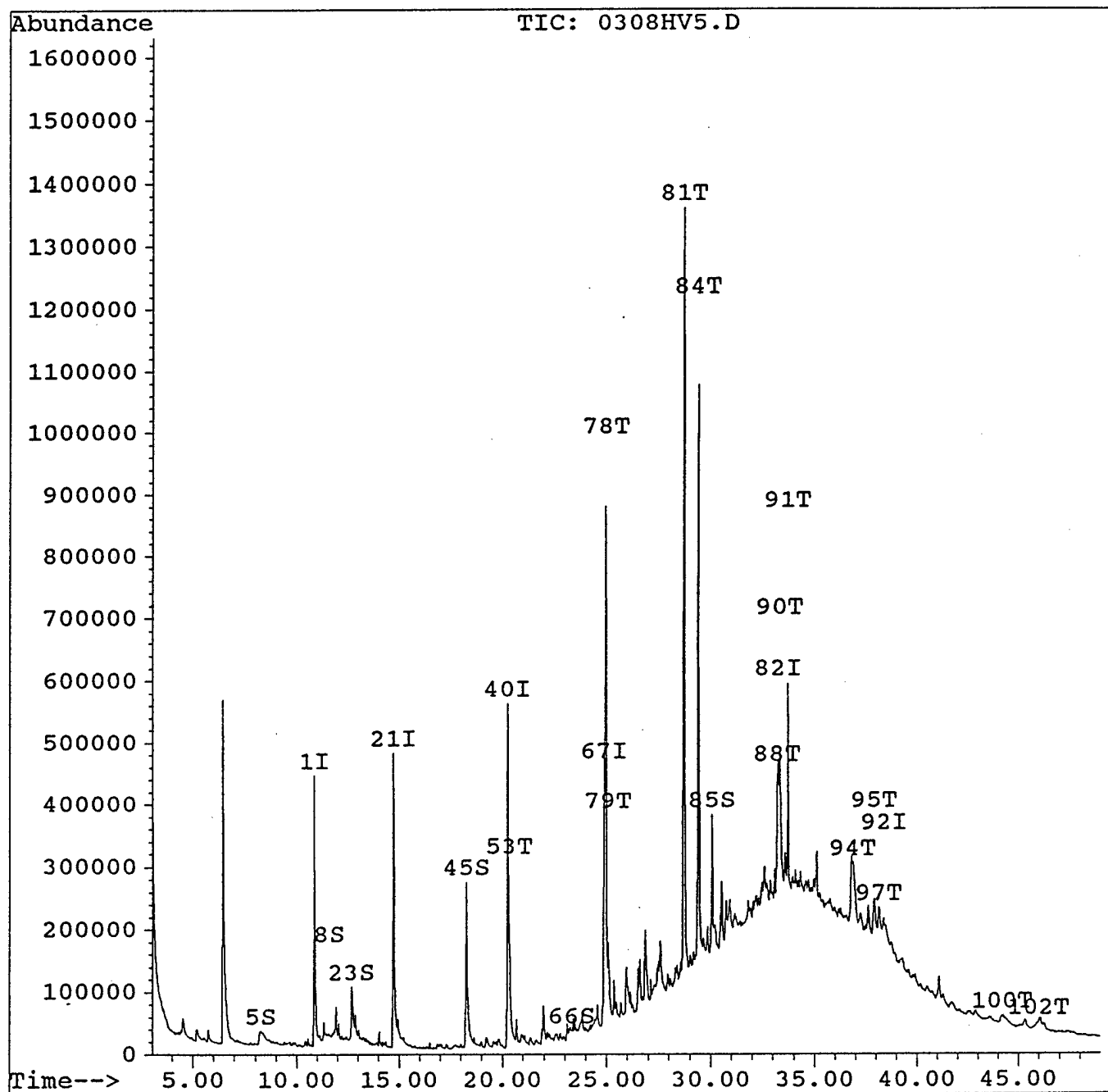


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV5.D  
 Acq Time : 6 Mar 94 8:40 pm  
 Sample : 9402010553  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:03 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV6.D  
 Acq Time : 6 Mar 94 9:38 pm  
 Sample : 9402010554  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:07 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	303026	40.00	ng	0.10
21) Naphthalene-d8	14.72	136	1041994	40.00	ng	0.07
40) Acenaphthene-d10	20.26	164	600727	40.00	ng	0.09
67) Phenanthrene-d10	24.90	188	790714	40.00	ng	0.05
82) Chrysene-d12	33.29	240	167625	40.00	ng	0.16
92) Perylene-d12	38.47	264	77224	40.00	ng	0.41
System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.22	112	280106	36.46	ng	91.15%
8) Phenol-d5	11.55	99	376772	37.14	ng	92.85%
23) Nitrobenzene-d5	12.69	82	324232	36.96	ng	92.40%
45) 2-Fluorobiphenyl	18.26	172	626109	28.76	ng	71.89%
66) 2,4,6-Tribromophenol	23.36	330	50308	22.67	ng	56.68%
85) Terphenyl-d14	30.05	244	265704	55.32	ng	138.30%
Target Compounds						Qvalue
87) Butylbenzylphthalate	31.81	149	37336	7.99	ng	88
91) Bis(2-ethylhexyl) phthalat	33.71	149	75386	12.49	ng	98

wt. of sample = 30.98 g      % solid = 83.29%

Actual conc.

$$(87) \quad \frac{7.99 \times 1000}{30.98 \times 0.8329} = 309.65 \text{ ppb.}$$

$$(91) \quad \frac{12.49 \times 1000}{30.98 \times 0.8329} = 491.99 \text{ ppb.}$$

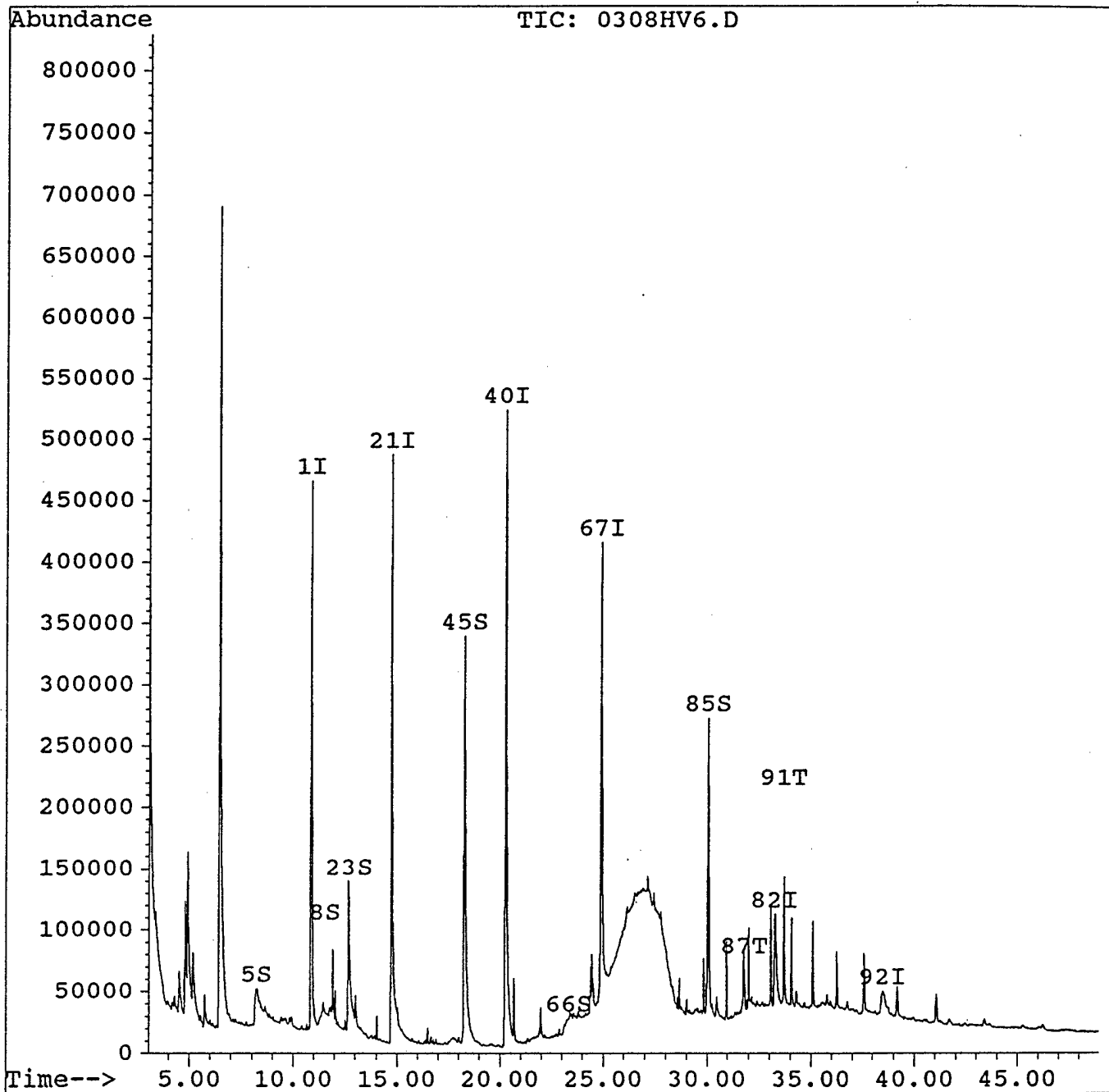


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV6.D  
Acq Time : 6 Mar 94 9:38 pm  
Sample : 9402010554  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:07 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV7.D  
Acq Time : 6 Mar 94 10:35 pm  
Sample : 9402010555  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:15 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

```
Method       : C:\HPCHEM\1\METHODS\8270.M
Title        : Modified EPA Method 8270B covering 8250 and 625
Last Update  : Mon Nov 15 15:55:57 1993
Response via : Multiple Level Calibration
```

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.85	152	244254	40.00	ng	0.09
21) Naphthalene-d8	14.72	136	851824	40.00	ng	0.07
40) Acenaphthene-d10	20.26	164	495669	40.00	ng	0.09
67) Phenanthrene-d10	24.90	188	659131	40.00	ng	0.06
82) Chrysene-d12	33.25	240	161557	40.00	ng	0.11
92) Perylene-d12	38.37	264	75303	40.00	ng	0.32

System Monitoring Compounds						%Recovery
5)	2-Fluorophenol	8.24	112	245021	39.57 ng	98.92%
8)	Phenol-d5	11.61	99	328062	40.12 ng	100.30%
23)	Nitrobenzene-d5	12.69	82	293888	40.98 ng	102.45%
45)	2-Fluorobiphenyl	18.26	172	586938	32.67 ng	81.68%
66)	2,4,6-Tribromophenol	23.40	330	41311	22.56 ng	56.41%
85)	Terphenyl-d14	30.06	244	276352	59.70 ng	149.25%

Target Compounds						Qvalue
53) Acenaphthene	20.36	154	83945	5.67 ng		97
62) Fluorene	21.98	166	102376	6.85 ng		98
78) Phenanthrene	24.97	178	2040304	120.26 ng		97
79) Anthracene	25.10	178	424081	27.70 ng		98
81) Fluoranthene	28.74	202	3130106	199.24 ng		99
84) Pyrene	29.41	202	2124957	289.24 ng	m	99
88) Benzo(a)anthracene	33.21	228	382195	83.38 ng		97
90) Chrysene	33.33	228	495968	132.60 ng		98
91) Bis(2-ethylhexyl) phthalat	33.70	149	44093	7.58 ng		98
94) Benzo(b)fluoranthene	36.86	252	441923	51.28 ng	m	93
95) Benzo(k)fluoranthene	37.89	252	138070	41.93 ng	m	73
97) Benzo(a)pyrene	38.11	252	159041	45.38 ng	m	75
100) Indeno(1,2,3-cd)pyrene	44.20	276	90950	26.14 ng	#	85
102) Benzo(g,h,i)perylene	45.89	276	84933	35.73 ng	m	40

Actual cone.

wt. of sample = 30.20 g      % solid = 85.66%

Multiplication factor = 38.66.

(53) 219.18 ppb.

(90) 5126-32 pfb

(62) 264-82 ppb

(91) 293.04 Pp6

(78) 4649-25 ppb

(94) 1982.48 ppb

(79) 1670.88 ppb

(95) 1621-02 ppg

(81) 7725.69 ppb

(97) 1254-39 ppb

(94) 11182.02 ppb

(100) 1010.57 ppb

(27) 3 2 2 3 4 7 ppb.

(102) 1381.32 Pp6.

(#) = qualifier out of range (m) = manual integration

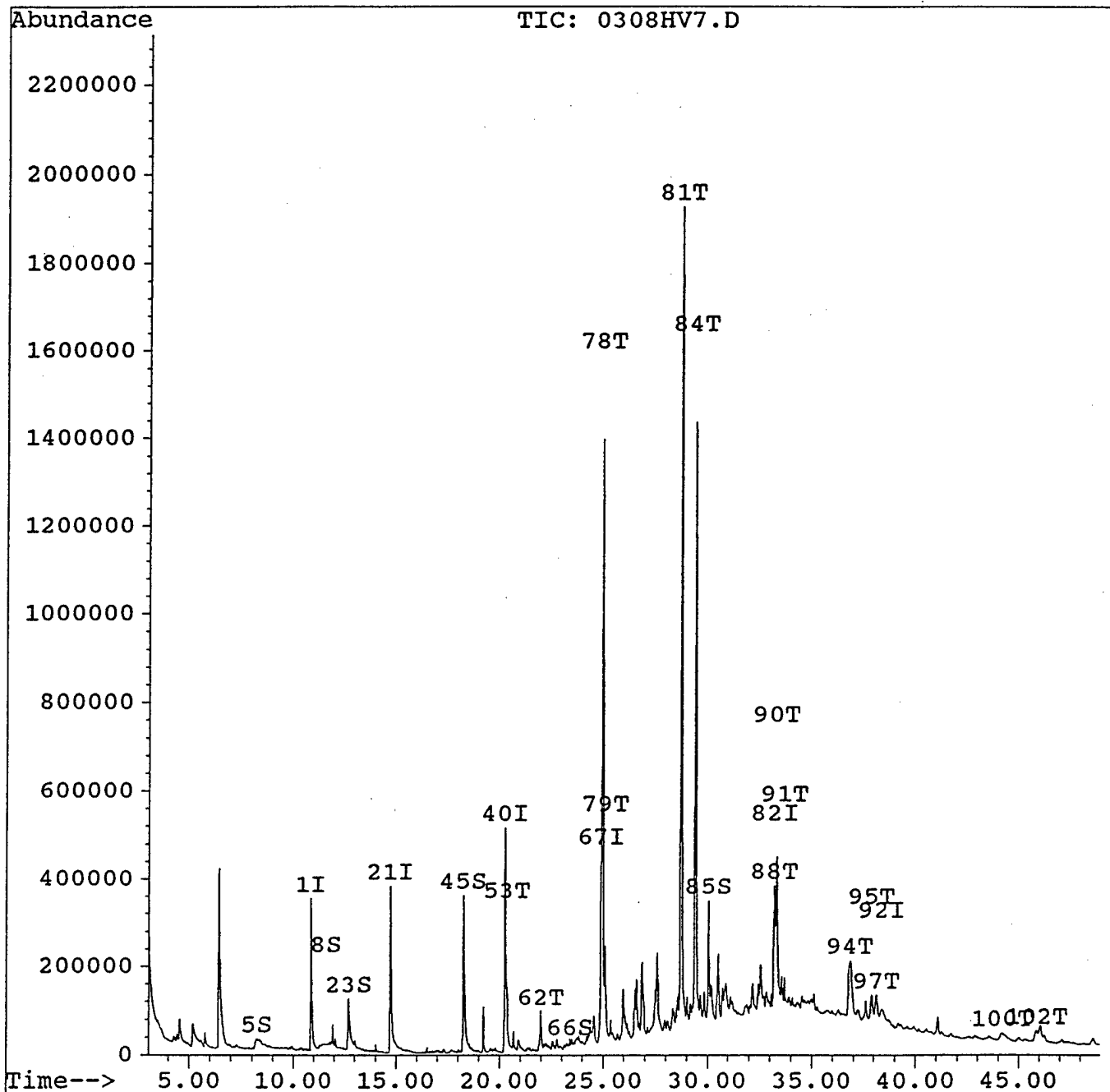


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV7.D  
 Acq Time : 6 Mar 94 10:35 pm  
 Sample : 9402010555  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:15 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV8.D  
 Acq Time : 6 Mar 94 11:33 pm  
 Sample : 9402010556  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:22 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.87	152	251936	40.00	ng	0.11
21) Naphthalene-d8	14.73	136	883085	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	519262	40.00	ng	0.10
67) Phenanthrene-d10	24.90	188	667734	40.00	ng	0.06
82) Chrysene-d12	33.27	240	133346	40.00	ng	0.14
92) Perylene-d12	38.42	264	59534	40.00	ng	0.36

## System Monitoring Compounds

						%Recovery
5) 2-Fluorophenol	8.29	112	261883	41.00	ng	102.51%
8) Phenol-d5	11.64	99	354977	42.09	ng	105.22%
23) Nitrobenzene-d5	12.68	82	265355	35.69	ng	89.23%
45) 2-Fluorobiphenyl	18.27	172	537002	28.53	ng	71.33%
66) 2,4,6-Tribromophenol	23.54	330	41973	21.88	ng	54.71%
85) Terphenyl-d14	30.05	244	208868	54.67	ng	136.67%

## Target Compounds

						Qvalue
78) Phenanthrene	24.97	178	149383	8.69	ng	98
81) Fluoranthene	28.72	202	251935	15.83	ng	97
84) Pyrene	29.40	202	175431	28.93	ng	m 99
88) Benzo(a)anthracene	33.22	228	25477	6.73	ng	m 90
90) Chrysene	33.34	228	33309	10.79	ng	93
91) Bis(2-ethylhexyl) phthalat	33.70	149	29448	6.13	ng	95
94) Benzo(b)fluoranthene	36.91	252	35287	5.18	ng	m 72

wt. of sample = 30.38 g % solid = 89.37 %  
 Actual conc. = Multiplication Factor = 36.47

(78) 316.94 ppb  
 (81) 577.32 ppb  
 (84) 1655.08 ppb  
 (88) 245.44 ppb  
 (90) 393.51 ppb  
 (91) 223.56 ppb  
 (94) 188.92 ppb

(#) = qualifier out of range (m) = manual integration

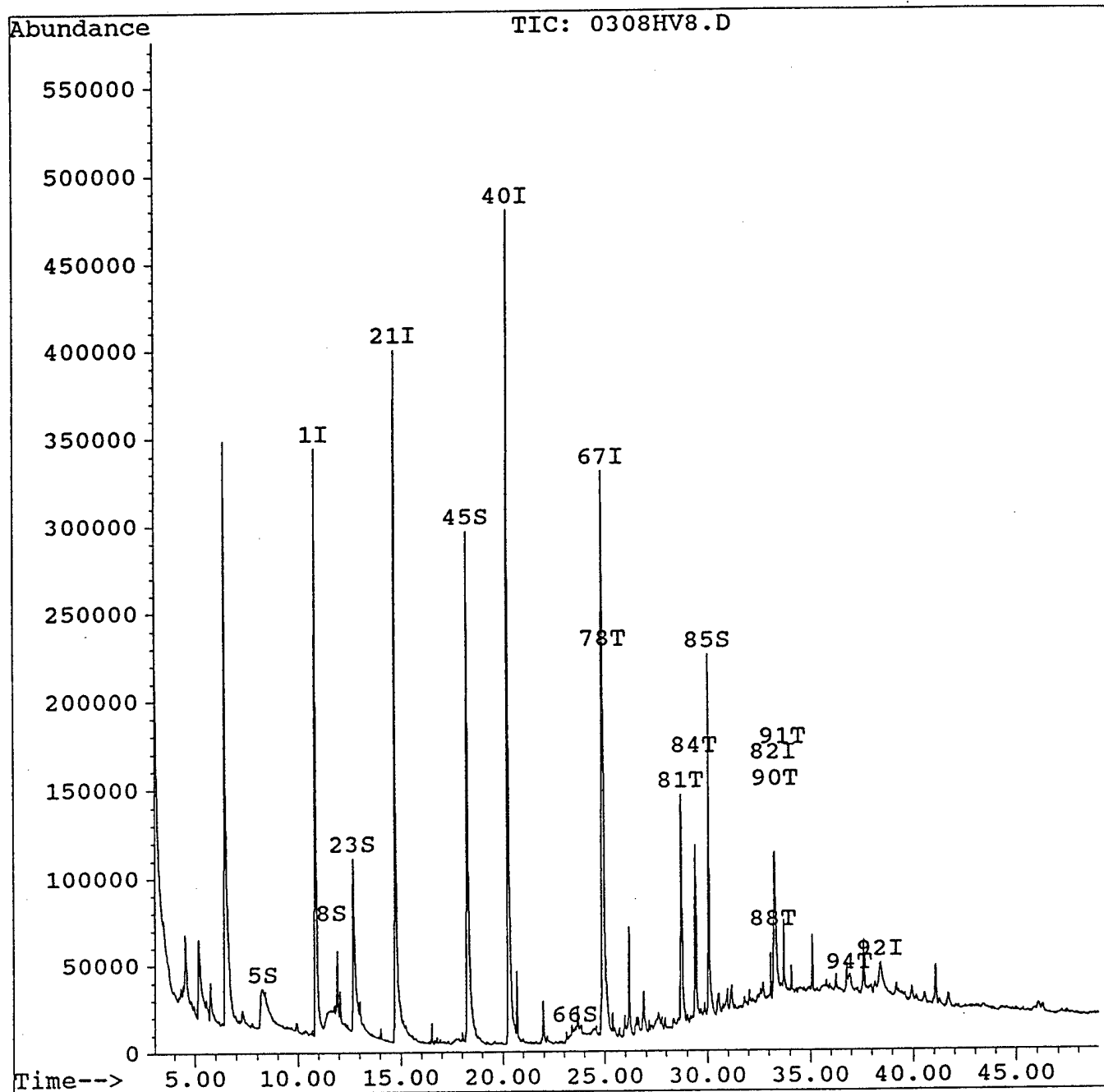


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV8.D  
Acq Time : 6 Mar 94 11:33 pm  
Sample : 9402010556  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:22 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV9.D  
 Acq Time : 7 Mar 94 12:30 am  
 Sample : 9402010557  
 Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
 Quant Time: Mar 9 22:26 1994

Operator: HJV  
 Inst : GC/MS  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
 Title : Modified EPA Method 8270B covering 8250 and 625  
 Last Update : Mon Nov 15 15:55:57 1993  
 Response via : Multiple Level Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.86	152	255167	40.00	ng	0.11
21) Naphthalene-d8	14.73	136	894777	40.00	ng	0.08
40) Acenaphthene-d10	20.27	164	522134	40.00	ng	0.10
67) Phenanthrene-d10	24.90	188	667680	40.00	ng	0.06
82) Chrysene-d12	33.27	240	130188	40.00	ng	0.14
92) Perylene-d12	38.42	264	55213	40.00	ng	0.36

System Monitoring Compounds						%Recovery
5) 2-Fluorophenol	8.25	112	252801	39.08	ng	97.70%
8) Phenol-d5	11.66	99	320404	37.51	ng	93.77%
23) Nitrobenzene-d5	12.68	82	271591	36.05	ng	90.13%
45) 2-Fluorobiphenyl	18.27	172	537385	28.40	ng	70.99%
66) 2,4,6-Tribromophenol	23.58	330	36472	18.91	ng	47.28%
85) Terphenyl-d14	30.07	244	205943	55.21	ng	138.02%

Target Compounds						Qvalue
78) Phenanthrene	24.97	178	151541	8.82	ng	97
81) Fluoranthene	28.73	202	211329	13.28	ng	97
84) Pyrene	29.41	202	149080	25.18	ng	m 99
88) Benzo(a)anthracene	33.22	228	21975	5.95	ng	94
90) Chrysene	33.36	228	24613	8.17	ng	# 93
91) Bis(2-ethylhexyl) phthalat	33.71	149	29039	6.19	ng	99

wt of sample = 30.02g % solid = 86.72%

Multiplication factor = 38.39

∴ Actual conc.

(1) Phenanthrene = 338.60 ppb

(2) Fluoranthene = 509.82 ppb

(3) Pyrene = 966.66 ppb

(4) Benzo(a)anthracene = 228.42 ppb

(5) Chrysene = 313.65 ppb

(6) Bis(2-ethylhexyl) phthalate = ~~619~~ 237.63 ppb

(#) = qualifier out of range (m) = manual integration

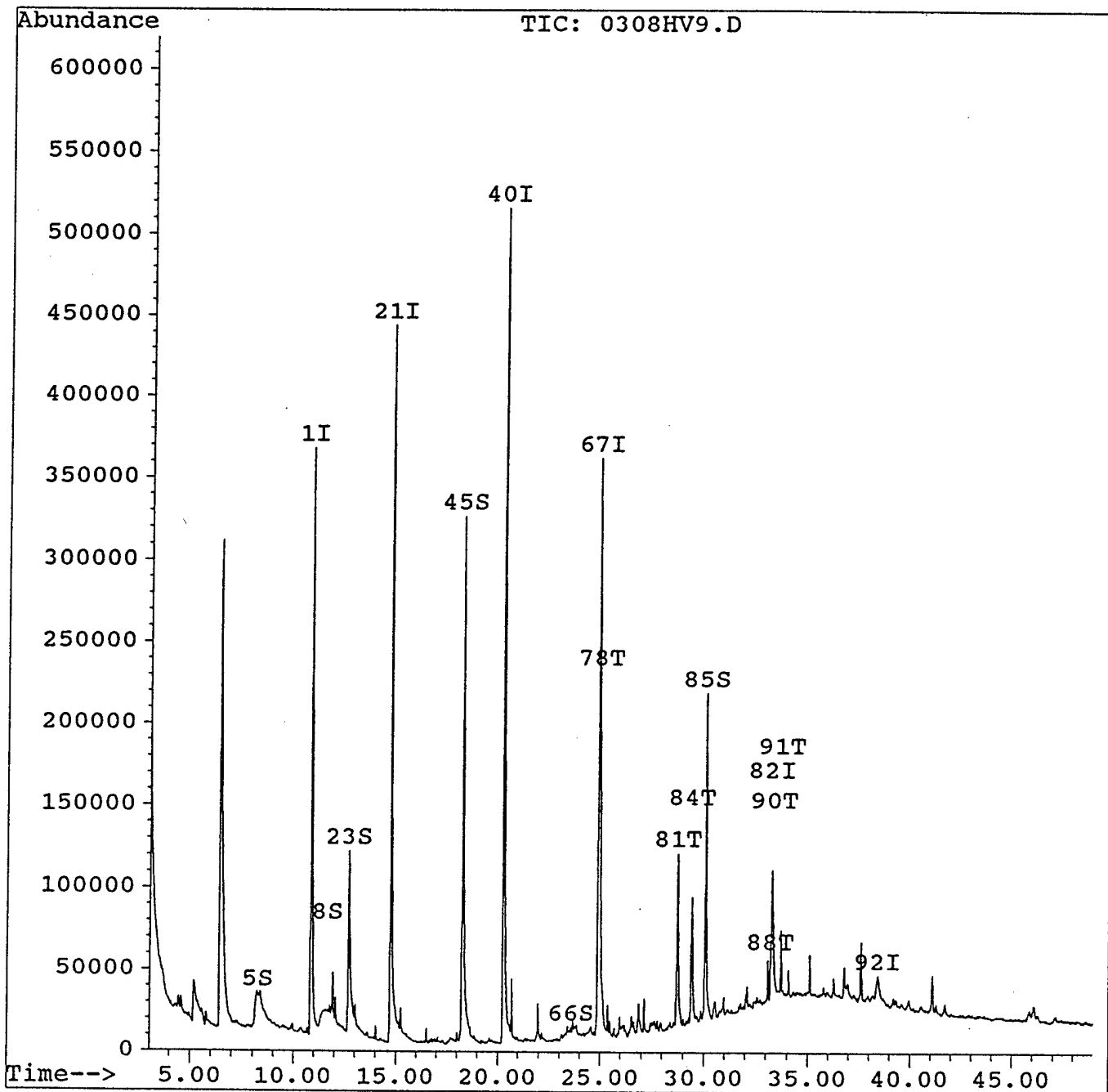


# Quantitation Report

Data File : C:\HPCHEM\1\DATA\0308942\0308HV9.D  
Acq Time : 7 Mar 94 12:30 am  
Sample : 9402010557  
Misc : 1uL INJECTION, 10uL INTSTD. ADDED  
Quant Time: Mar 9 22:26 1994

Operator: HJV  
Inst : GC/MS  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\8270.M  
Title : Modified EPA Method 8270B covering 8250 and 625  
Last Update : Mon Nov 15 15:55:57 1993  
Response via : Multiple Level Calibration





# Organic Extraction Log Worksheet

## Semi-Volatiles

Date: 03/04/94

Time: 0830

Analyst: H2V

Method: 8270

Control Number	Matrix	Sample Volume/Weight	Spike	Extract Volume	Comments
9402010531		30.06g			
0532		30.66g			
0533		30.46g			
0534		30.14g			
0535		30.44g			
0536		29.60g			
0537		29.90g			
0538		30.72g			
0539		30.43g			
0540		30.20g			
0541		30.44g			
0542		31.96g			⊕ Concentrator broke
0543		30.94g			
0544		30.54g			
0551		31.09g			⊕ Concentrator slipped off
0552		30.37g			
0553		30.61g			
0554		30.93g			
0555		30.20g			
0556		30.38g			
0557		30.02g			
0558		30.36g			
0559		31.06g			
0560		31.45g			
0561		30.37g			
0562		31.14g			

0563

30.98g

0542

30.37g

0551

30.25g

03/07/94

03/08/94

03/09/94



[illegible]



**APPENDIX F**

**FIELD CHANGE REQUEST FORMS**



# OPERATIONAL TECHNOLOGIES

## DEVIATIONS FROM WORK PLAN DURING FIELD WORK

ORIGINATOR/DATE: Matt Alexander 2/24/94

ANG BASE/STATION: Hot Springs, Arkansas

WORK PLAN TOPIC: Number of <sup>Soil</sup> samples per borehole. Work plan indicates 2 samples per borehole at each ACC, as given in Table 5.2

DEVIATION IN FIELD WORK: Only one <sup>Soil</sup> sample was obtained at one of three boreholes at Current Temporary Waste Storage ACC (CTS-001BH), as bedrock was encountered during HSA drilling at 1.75 feet BLS. Two samples/borehole were obtained at the other two boreholes at this ACC. Because of nearby rock outcropping, a similar one sample/borehole result is anticipated later today at two boreholes (NEF-003BH & 004BH) at Northeast Fence Line ACC.

ANGRC PROJECT MANAGER ACCEPTANCE: \_\_\_\_\_



OPERATIONAL TECHNOLOGIES

MODIFICATION TO WORK PLAN  
FOR FIELD WORK

ORIGINATOR/DATE: Matt Alexander 2/18/94

ANG BASE/STATION: Hot Springs, Arkansas

WORK PLAN TOPIC: Drumming of soil cuttings for each  
drilling location, Sect. 10#1, pg. 10-1.

SUGGESTED MODIFICATION FOR FIELD WORK: Drum soil cuttings  
in 55 gallon steel drums, by AOC rather than by  
individual drill location. If contamination is encountered  
during drilling, as evidenced by field PIN readings >100 ppm,  
such cuttings will be drummed separately.

REASON FOR MODIFICATION: There will be 3-4 times fewer  
drums for the Station to deal with. Containerization  
will be more space efficient, since only small amounts  
of cuttings will be generated ~~at~~ by hand augering  
at each drill location.

ANGRC PROJECT MANAGER APPROVAL: \_\_\_\_\_



**APPENDIX G**  
**CHAIN-OF-CUSTODY**



**ENVIRONMENTAL SERVICES COMPANY, INC.**

**Branch Office:**  
1704 Shelby Oaks Dr. N  
Memphis, TN 38134  
Phone: (901) 372-9332  
Fax: (901) 372-9334

**Corporate Office:**  
13715 W. Markham  
Little Rock, AR 72215  
Phone: (501) 221-2565  
Fax: (501) 221-1341

987.4 extractable  
99.1 W Diesel  
98.7 A only

## Chain of Custody

21345

Company Name: Operational Technologies Corporation

Address:	4100	NW	Loop	410	St	230

San Antonio Tx 78229

Phone Number: (214) 731-0000 Customer Number: 1308-193

Fax Number: (210) 731-0008	Pur. Order Number: N/A
----------------------------	------------------------

Location: 140 T SPRINGS ANG-S

Sample Identification	Date & Time Collected	Matrix	G	C	F	Container Size & Type	No.	Preservative
NEF - 005, Int 1	2/24 / 0940	Soil				1 Brass Sleeve	1	None
NEF - 005, Int 2	2/24 / 1015	"				"	1	"
CTS - 003, Int 1	2/24 / 1109	"				"	1	"
CTS - 003, Int 2	2/24 / 1120	"				"	1	"
CTS - 002, Int 1	2/24 / 1145	"				"	1	"
CTS - 002, Int 2	2/24 / 1200	"				"	1	"
CTS - 001, Int 1	2/24 / 1225	"				"	1	"
NEF - 004, Int 1	2/24 / 1430	"				"	1	"
NEF - 003, Int 1	2/24 / 1445	"				"	1	"
NEF - 003, Int 2	2/24 / 1500	"				"	1	"
NEF - 002, Int 1	2/24 / 1520	"				"	1	"
NEF - 002, Int 2	2/24 / 1540	Soil				Brass Sleeve	1	None

Sampled By: EARL E PARKER  
Date: 2/24/94  
Time: 07:14  
UPTECH St Marys

Relinquished By: W. J. E. D. Date: 12/24/94 Time: 1745

Received By: *[Signature]*

Date: Time: 17.

Shipped By:	Date:	Time:	Relinquished By:
			<i>[Signature]</i>

Date:	Time:	Received By:
		<i>Carly</i>

2-24

**Shipped Through:**

Shipped Through:

2011 P5

Relinquished By:

Relinquished By:	Date:	Time:	Received By:
------------------	-------	-------	--------------

Date: \_\_\_\_\_

Date: 20/11/2015 Time:

Comments:

PAGE= 1 of 2

100

Date: 11/11/12



# ENVIRONMENTAL SERVICES COMPANY, INC.

Branch Office:  
1704 Shelby Oaks Dr. N  
Memphis, TN 38134  
Phone: (901) 372-9332  
Fax: (901) 372-9334

Corporate Office:  
13715 W. Markham  
Little Rock, AR 72215  
Phone: (501) 221-2565  
Fax: (501) 221-1341

Branch Office:  
1107 Century Ave  
Springdale, AR 72764  
Phone: (501) 750-1170  
Fax: (501) 750-1172

## Chain of Custody

Company Name: Operational Technologies Corporation

Address: 4100 NW Loop 410, St. 230

San Antonio Tx 78229

Phone Number: (210) 731-0000 Customer Number: 1308-193

Fax Number: (210) 731-0008 Pur. Order Number: N/A

Location: Hot Springs PA/SI

Sample Identification	Date & Time Collected	Matrix	G	C	F	Container Size & Type	No.	Preservative
NEF-001 Int 1	2/24/155b	Soil				Brass Sleeve	1	None
NEF-002 Int 2	2/24/1600	Soil				Brass Sleeve	1	None
<del>3 sleeves labelled "cep"</del>								

Parameter	Turn Around
TPH / Ca Med 8015	Regular
Metals / SW Method	48 Hour
SWC / SW 8270	24 Hour
VOC / SW 8240	Special: As per Contract
	Lab ID Number

9402010543

9402010544

Sampled By: Earl E Parker Date: 2/24/94 Relinquished By: Earl E Parker Date: 2/24/94 Time: 1745 Received By: Mr. B. Smith Date: 2-24 Time: 1745

Shipped By: \_\_\_\_\_ Date: \_\_\_\_\_ Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Shipped Through: \_\_\_\_\_ Date: \_\_\_\_\_ Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received For Lab By: Donor Date: 2/24/94 Time: 1200

Comments: PAGE 2 of 2



# ENVIRONMENTAL SERVICES COMPANY, INC.

Branch Office:  
1704 Shelby Oaks Dr. N  
Memphis, TN 38134  
Phone: (901) 372-9332  
Fax: (901) 372-9334

Corporate Office:  
13715 W. Markham  
Little Rock, AR 72215  
Phone: (501) 221-2565  
Fax: (501) 221-1341

Branch Office:  
1107 Century Ave  
Springdale, AR 72764  
Phone: (501) 750-1170  
Fax: (501) 750-1172

## Chain of Custody

Company Name: Operational Technologies Corp. Cust. Number: 1308-193

Address: 4100 NW Loop 410 SI 230

Phone Number: San Antonio TX 78229

Fax Number: (210) 731-0000

Location: HDT Springs AUGS

Sample Identification	Date & Time Collected	Matrix	G	C	F	Container Size & Type	No.	Preservative
ODS-004 BH, Int 1	2/25/94/6940	Soil				Brass Sleeve	1	NONE
ODS-002 BH, Int 1	2/25/94/6950	"				"	1	"
ODS-001 BH, Int 1	2/25/94/1010	"				"	1	"
ODS-001 BH, Int 2	2/25/94/1120	"				"	1	"
ODS-003 BH, Int 1	2/25/94/1140	"				"	1	"
NWD-001 BH, Int 1	2/25/94/1210	"				"	1	"
NWD-002 BH, Int 1	2/25/94/1225	"				"	1	"
NWD-002 BH, Int 2	2/25/94/1250	"				"	1	"
NWD-003 BH, Int 1	2/25/94/1300	"				"	1	"
NWD-003 BH, Int 2	2/25/94/1330	"				"	1	"
NWD-004 BH, Int 1	2/25/94/1410	"				Brass Sleeve	1	"
CTS-004 SF	2/25/94	Soil				Glass Jar	1	NONE

Sampled By: Enr / Prober Date: 2/25/94 Relinquished By: Earl E. Harkins Date: 2/25/94 Received By: EP Date: 2/25/94

Shipped By: Sik Manager / Prober Date: 2/25/94 Relinquished By: Earl E. Harkins Date: 2/25/94 Received By: EP Date: 2/25/94

Shipped Through: Operational Technologies Corp. Date: 2/25/94 Relinquished By: Earl E. Harkins Date: 2/25/94 Received By: EP Date: 2/25/94

Comments: Page 1 of 2 Date: 2/25/94 Received For Lab By: Earl E. Harkins Date: 2/25/94 Time: 17:45

Parameter

Turn Around

Regular

48 Hour

24 Hour

Special:

See Contract

Lab ID Number

19462-010051

552

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# ENVIRONMENTAL SERVICES COMPANY, INC.

Branch Office:  
1704 Shelby Oaks Dr. N  
Memphis, TN 38134  
Phone: (901) 372-9332  
Fax: (901) 372-9334

Corporate Office:  
13715 W. Markham  
Little Rock, AR 72215  
Phone: (501) 221-2565  
Fax: (501) 221-1341

Branch Office:  
1107 Century Ave  
Springdale, AR 72764  
Phone: (501) 750-1170  
Fax: (501) 750-1172

## Chain of Custody

Company Name: Operational Technologies Corp  
Address: 4100 Nul Loop Div St. 230  
San Antonio TX 78229  
Phone Number: (210) 731-0000  
Fax Number: (210) 731-0008  
Location: Hot Springs ANG

Cust. Number: 1308-193

Sample Identification

Date & Time Collected	Matrix	G	C	F	Container Size & Type	No.	Preservative
2/25/94/1555	Soil				Glass Jar	1	None
2/25/94/1450	WATER				Bottle Set	5	VOC-HCL MET-HNE3
NONE FOLLOWS							

Parameter

Parameter	Turn Around
VOC - SW 8240	Regular
SVOC - SW 8270	48 Hour
TPH - BOIS (Alm)	24 Hour
Metals - SW 8270	Special:
	See Contract
	Lab ID Number
	503
	9402010512

Sampled By: EARC Proker Date: 2/25/94 Relinquished By: Carol Elank Date: 2/25/94  
SITE Manager, Optech

Shipped By: \_\_\_\_\_ Date: \_\_\_\_\_ Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_

Shipped Through: \_\_\_\_\_ Date: \_\_\_\_\_ Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received By: \_\_\_\_\_ Date: \_\_\_\_\_

Comments: PAGE 2 of 2 2/25 17:45

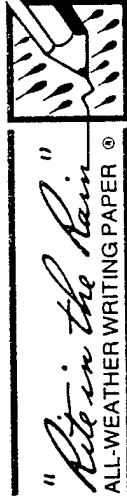


**APPENDIX H**

**FIELD NOTES**



FedEx 134264861



Name **EARL PARKER**  
Address **4100 NW LOOP 410**  
Phone **SAN ANTONIO TX**  
Project **(210) 731-0000**  
**HOT SPRINGS ANG**  
**1308-193**

"Rite in the Rain"—a unique all-weather writing surface created to shed water and to enhance the written image. Makes it possible to write sharp, legible field data in any kind of weather.

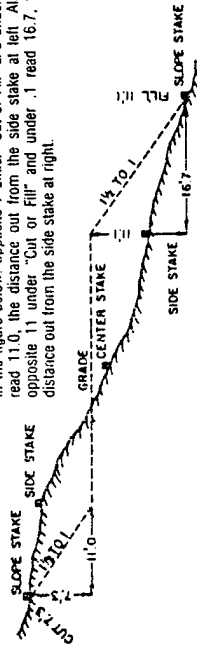
a product of

**J. L. DARLING CORPORATION**  
TACOMA, WA 98421-3696 USA

# DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width, Side Slopes 1½ to 1.

In the figure below, opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	Distance out from Side or Shoulder Stake										Cut or Fill
	0	1	2	3	4	5	6	7	8	9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40







Wednesday

DAY 1

23 FEB 94

0800

Arrive at Hot Springs ANG.

Meet with MSG Cannon, the POC

for the Station. Earl Parlor (EP),

Mark Henson (MH), Joe Byrd (JB)

from Optech. Brief MSG on the

investigation. He gives us a room

to operate from.

0830

Walk sites. No serious obstructions

at any AOC. Gas line at

Current Temporary Waste Storage AOC

(CTS-AOC).

0900

MH and JB unload van and prepare

for staking AOCs.

EP. phone Mat Alexander to inform

him of our progress. Find out on

Arrival of HAZWRAP representative.

E.P. phone Quinn Baber at B&F Engineering

to coordinate meeting w/ Registered

Geologist And Surveyors

E.P. Phone Scott Anderson - Anderson Engineering

Consultants (Drillers) to coordinate

activities. Drillers have delivered 8

drums already to site. Will arrive to

drill tomorrow (24 Feb) at 9:00 am

to drill.

1000 Stake boring locations at the AOCs.

WEATHER:

Cool, cloudy and windy. Temp: 40's.

Overcast. Forecast: Cool and windy

today. Hi: Low 50's turning

partly cloudy by afternoon. No

rain in the forecast. Soil is

saturated from rain over the past

2 days.

1030 hrs.

SAFETY BRIEFING:

Given by Earl Parlor Optech

Attending Mark Henson Optech

Joe Byrd Optech

Mark Henson Assigned: Site Safety Officer

Discusses site conditions and what will

be covered in Safety briefing for drillers



1100 Go to B&F Engineering to meet with Quin Baber (Reg. Prof. Geologist) and John Thorton (Surveyor).

Discussed sampling program and when he will come out to verify and

certify soil descriptions. He will come out at least twice per day; at 11 am and 5 pm to check samples and descriptions.

Met with John Thorton on surveying. Crew will come out on Monday at 7:30 am to go over sampling locations and identification.

1200 Go to Lunch

1300 Return to Station.

Picked up supplies i.e. wheelbarrow, bar, breaker bar for grouting and drilling.

1330 Called Matt Alexander to confirm

HAZURAP Arrived. Says rep may be in this afternoon.

MH working on GC

JB clean sleeve, cage, samplers

1420 David Bunn from HAZURAP arrives at Station.

MH continues to work on GC

JB decons equipment, wraps in foil after day.

1530 JB breaks through asphalt at site of hand augers.

1635 E.P. and J.B. begin to depart AWA. David Bunn departs site.

1645 E.P. and J.B. depart site.

M.H. works more on GC.

We go to purchase last supplies. Check on Fed-Ex drop for Samples.



-5-

1700 Arrive At Hotel, call driller.  
California sampler has not yet  
arrived at drillers office.

1705 Call John Morris and Matt  
Alexander and inform them  
of sampler situation.

Matt calls supplier and will  
have a sampler sent to the  
Hotel for next day AM  
pickup (Thu -24 Feb).

Call driller to inform him of  
the situation. He will arrive  
on schedule. We will pick up  
sampler at 9:30 AM and then  
continue to proceed.

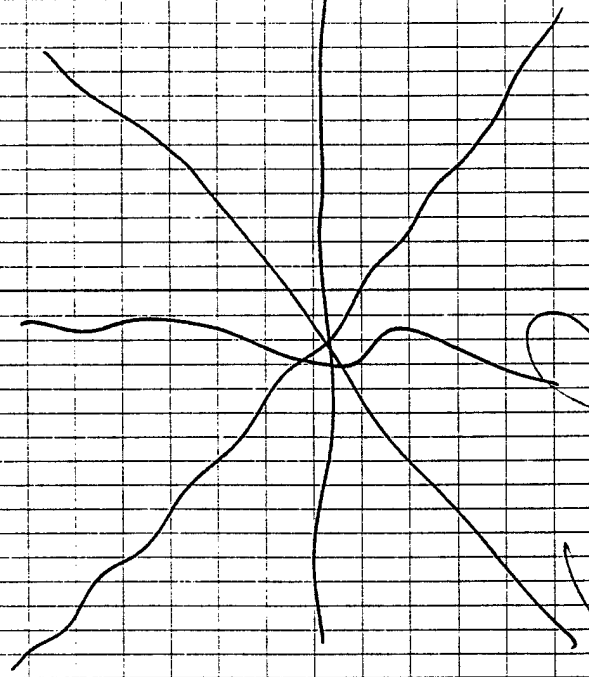
1820 Mark Henson checks in from  
Station. Has good 1PPM  
calibration on field G.C.  
Will be ready to proceed in  
the morning.

-6-

Matt Alexander's packages w/ work  
plans arrive along with HSP  
sign sheets. Hazco regulator  
arrives FE0-EX

2030 Begin to prepare sample packages  
for field sampling. Prepare baggies,  
teflon, aluminum foil squares and  
sample labels.

2400 Lights out for the day.



Cal E. E. E. 2-23-94 11.5 hrs



THURS	DAY 2	-7- 24 FEB 94
0710	E.P., J.B, and MH Arrive At Site. Begin to set up for operations.	
0800	Safety Briefing SSO Mark Hanson } Earl Parker } Optech Joe Byrd }	
	Discussed daily activities, HSA drilling and sampling along NE fence line AOC. Discussed barriers, entry hearing protection, env hazards. Will have another Safety Briefing for drillers.	
	WEATHER Clear Sunny, Cool Hi: mid 50's Light winds. Should be a nice day.	
0815	EP and JB go to set up over NE Fence line AOC. Set up decon station and sample table.	

0820	David Bunn Arrives At Site.	
0840	Set up over NEF 005 BH Calibrate AIO 100 PPM Isotachylene Using a HNU DL-101	
0910	Drillers arrive at Station. Spoon has not arrived. Have a Safety Meeting with drillers. Earl Parker gives briefing to Dennis Young } James Hargrove } Anderson Drilling. Sign compliance forms. Discuss hazards and history of CTS-AOC.	
0920	Begin sampling NEF 005 BH Interval 1 0.0'-1.0' BLS P10 BG - 1.2 PPM - Opening - 1.2 PPM ATHA = 0.0 PPM Recovery = 100 % Lt. Brown to yellow clayey silt, silt, and sandy silt. Many angular shale and sandstone fragments. No odor. Slightly moist.	



0940 NEF 005 BH INT 2

Interval 1.0'-2.0' BLS

PID = 1.2 BG

1.2 Opening

ATHA : 1.1 PPM

Recovery : 100%

Lt. Brown to yellowish clay and silt with some sand and small angular rock grains. Moist and moderately cohesive. Silty clay. No odor. Soft bedrock in the HA reversal.

1020

Spem Arms at Hotel. Mark Henson goes to the Hotel to get the spoon. Break down table at NEF ADC and move to CTS Area. Have the drillers move equipment to CTS area.

1100

Drillers set up over CTS-003 BH

Interval 1

0.0-1.5' BLS

SPT 0.0'-0.5' - 10

0.5'-1.0' - 4

1.0'-1.5' - 5

PID OPENING

1.0 PPM BG

25.0 PPM Opening

Poorly sorted fill material. Silty, sandy matrix with rounded to angular chert and gravel material. Slightly moist. No odor.

ATHA : 13.4 PPM

Recovery : 75%

Interval 2

1.5' - 3.0' BLS

SPT

3.0'-3.5' 5 - 1.5'-2.0'

3.5'-4.0' 18 - 2.0'-2.5'

4.0'-5.0' 50 - 2.5'-3.0'

PID opening

1.0 PPM

24.5 PPM Re Opening

ATHA : 7.8 PPM

% Recovery : 90%

Lt. Brown to Lt. gray sandy silt becoming

A silty clay near bottom. Sandy silt is

loose and slightly moist. Silty clay is

lighter and very cohesive. Many angular

rock fragments throughout. No odor.



1130	Move to CTS-002 BH	INT 1
	Interval: 0.0'-1.5' BLS	
	SPT	
	0.0'-0.5' - 4	
	0.5'-1.0' - 8	
	1.0'-1.5' - 9	
	P <sub>10</sub> = 0.8 BG	
	= 28.5 Opening	
	ATHA: 6.1 PPM	
	% Recovery: 100%	
	Brown, very poorly sorted fill material. Sandy, silty clay. Very moist and cohesive with abundant medium gravel particles and some larger cobble particles. No odor. Becoming more sandy at the bottom.	
	Interval: 1.5'-3.0' BLS	INT 2
	SPT	
	1.5'-2.0' - 9	
	2.0'-2.5' - 22	
	2.5'-3.0' - 50	At 2.7' BLS
	P <sub>10</sub> = 0.8 PPM	
	= 4.7 PPM Opening	
	ATHA = 4.7 PPM	
	% = 100% Recovery	

Lt. Brown sandy, clayey, silty. Slightly moist and cohesive. Some larger sand grains and angular small to medium gravel. Probable fill material. More clayey and cohesive at the bottom.

1220 HRS Setting up on CTS 001 BH

Interval: 0.0'-1.5' BLS

SPT

0.0'-0.5' = 8

0.5'-1.0' = 24

1.0'-1.5' = 48

$P_{10} = 0.8 \text{ PPM}$

= 7.4 PPM

ATHA : 4.3 PPM

% Recovery : 100%

Brown to gray sandy silt, moist. Very cohesive and moist. Very poorly sorted with abundant small gravel and sand grains. Becomes more consolidated clay at bottom.

1305 Drillers finished at CTS AOC. Break to down area to skim clean augers. Grant holes. Pre-pam drillers report



-13-

1315	1.5 hrs drilling 08.5 hrs Decan 0.5 hrs Gout 1.5 Shndby 4.0 hrs on Silt.	
	Drillers grout holes, decan ages, down decan water, and depart site.	
1330	J.B. goes to get more ice for samples. EP calls Matt Alexander for check in and briefing on progress. David Burr departs site for an hour or so.	
1400	E.P. and J.B. return to NorthEast and East Fence line AOC Recalibrate PID using 100 PPM Isobutylene NEF 004 BH INT 1 Interval 0.0-1.0' BLS Bedrock at 0.8" BLS PID = 0.8 BG = 0.9 Opening ATHA: 0.8 PPM Recovery: 100%	

-14-

	Lt. Brown to yellowish silt, clayey silt. Sandy silt. some small angular gravel Mostly dry and not cohesive. No odor. Bedrock is soft. HA and Port H/c natural.	
NEF 003 BH	INT 1 0.0-1.0' BLS PID = 0.8 BG 1.8 Opening ATHA: 0.7 PPM Recovery: 100%	
	Lt. Brown silt, clayey silt and sandy silt. small angular gravel. Slightly cohesive. No odor. Very poorly sorted with larger angular rock fragments throughout.	
NEF 003 BH	(Int 2 - Pg 17) 1.0-2.0' BLS PID = 0.8 PPM = 1.3 PPM ATHA: 1.6 PPM Recovery: 100% LAB AS SECOND INT.	
	Lt. Brown to yellow sandy silt, becoming more silty and clayey with sand	



-15-

grains. Becoming more consolidated at the bottom. HA refusal at 2.0'.

EP

1510 NEF-002 BH  
0.0-2.0' BLS

Interval 81

PI0 = 0.9 BG  
= 1.1' Open Sampler

ATHA: 1.2 PPM

% Recovery: 100%

Brown silty clay. Abundant sand and angular small gravel particles. Moist and cohesive. Some larger, angular rock fragments. Root fragments. No odor.

1520 NEF-002 BH  
2.0-3.0' BLS

Interval 2

PI0 = 1.0 BG

= 2.1 PPM Open Sampler

ATHA: 1.1 PPM

% Recovery: 100%

Lt. Brown silty clay becoming more silty and sandy near the bottom. Many sand and angular small gravel particles.

-16-

Becoming less moist and cohesive at depth. HA refusal at 30'.

1540 NEF-001BH Int 1  
0.0-10' BLS

PI0 = 0.8 BG

= 0.8 Open Sampler

ATHA: 0.7 PPM

% Recovery: 100%

Brown silty clay, sandy clay with sand and angular gravel particles throughout. Root fragments. Moist and cohesive. Some chert particles. No odor. Becoming saturated at 0.8' BLS.

1555 NEF-001BH Int 2

Interval 1.75-2.75' Auger Refusal

PI0 = 0.8 BG

= 0.9 Open Sampler

ATHA: 1.1 PPM

% Recovery: 100%

Lt. Brown silty clay with sand and angular small gravel fragments. Saturated but very cohesive clay and silt.



Debriefing Comments:

- No deviations (unauthorized) were noted or observed.
- REPORTED TO ANGRG
  - Should not use zip-locks for GC samples.
  - Should not use duct tape to secure caps on soil samples
  - Should use solvents to calibrate field GC in areas of likely solvent contamination.
- Nut to be reported to ANGRG
  - Should set up decon station and sample prep table & upwind of drill rig
  - Should let equipment completely air dry before loading sleeves.
- Other comments
  - Excellent sample preparation table protocols and procedures. Best he has seen.
  - GC SOP is very good idea. And SOP was followed.

H/A refusal at 2.75' soft bedrock. Water in hole once H/A removed.

1610 NEF-003 BH Int 2  
 Int 20'-30' BGS  
 PID = 0.8 BG  
 = 1.3 PPM Sampler Opening  
 ATHA - 1.1 PPM  
 % Recovery = 100 %  
 Lt. Brown to yellowish sandy silt. clayey silt. Many sand and small gravel particles with larger angular rock fragments near the bottom. H/A refusal at 30'.

1630 Complete sampling for the day  
 E.P. prepares Chain of Custody and samples for shipment.  
 J.D. Breaks down decon station and grouts holes.

1715 E.P. departs site for FED-EX to ship samples.  
 Debriefing from David Dunn  
 HAZWOP Auditor.



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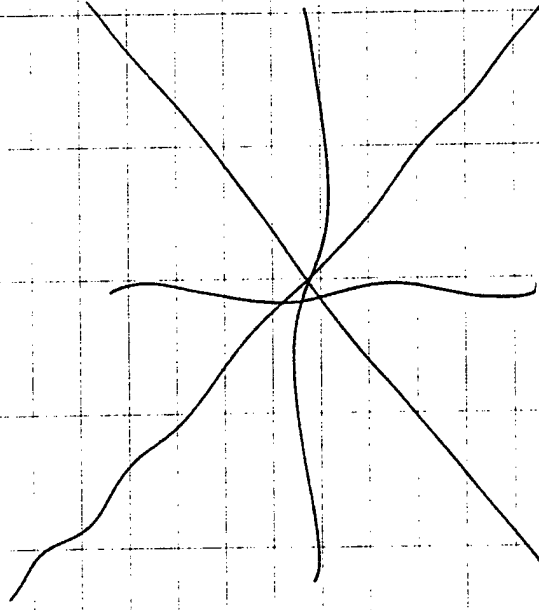
HARWARD AUDITOR will depart  
HOT SPRINGS tonight.

1735 Sign samples over to FED-EX,  
Return to Station.

M.H. performing remaining analysis  
on field GC.

Clean-up and pack up for the night.

1820 E.P., J.B., and M.H. depart site



Earl E. Lankford 2/24/94 (11 hrs)

-20-  
25 FEB 94

DAY 3

Fri

0730 E.O., J.B., M.H. Arrive at Site.  
E.P. prepares daily report and  
FAXes to John Morris.

J.B. prepares for operations.  
M.H. GC set-up.

0830 Call Debra Woosley (Lab) to inform  
of yesterday's shipment and on  
what to expect tomorrow

Call Scott Anderson (Driller) to  
thank him and inform him of  
the great job his drillers did.

0900 Prepare to sample for the day.  
Begin at Old Iron Storage AOC.

0930 O.P.S.-004 BH Int'l  
0.0' - 1.0' BCS Bedrock at 1.0'  
P10 = 1.0 PPM BG  
= 1.0 PPM Open Sampler.  
ATHA : 0.9 PPM

% Recovery : 90%



Asphalt and Maximal to 0.5' BLS  
becomes very poorly sorted fill to  
dry moist sandy silt to bedrock.

0950 ODS-002 BH Int 1  
1.0 - 1.8' BLS (Bedrock at 1.8')  
PID = 0.8 BG 0.0-1.0 Asphalt and  
= 0.8 Sampler Asphalt road base.

ATHA:  
% Recovery = 95%  
Very poorly sorted fill material. Coarse  
sand and gravel becoming dark,  
moist, poorly sorted sandy silt near  
bottom. Many large rock fragments.

1010 ODS-001 BH Bedrock (5.1' BLS)  
Int 1  
0.0' - 5.0' BLS  
PID = 0.9 BG Sampler Opening  
= 1.1  
ATHA: 3.4 RPM  
% Recovery: 100%  
- Saturated below 1.0' BLS

Int 2 ODS-001 BH - Saturated below 1.0' BLS  
4.0' - 5.0' BLS  
PID = 0.8 BG ATHA = 1.0 RPM  
= 0.8 Open Spoon % Recov = 100%  
Dark, very poorly sorted soil to 1.1' Gray  
very consolidated silty clay. Saturated.

1145 ODS-003 BH Int 1  
0.0' - 0.8' BLS Bedrock 0.8'  
PID = 0.9 BLS  
= 4.0 BLS  
ATHA: N/A No Soil  
% Recovery: 60%  
Very dark, organic rich soil. Silty to  
sandy soil with abundant root fragments  
and organic material. Gravel and small  
gravel.  
1200 Move to Northwest Ditch AOC  
1210 NWD-001 BH Int 1  
0.0 - 0.8' BLS Hand Auger Bedrock  
PID = 1.2 BG  
= 1.2 RPM Open Sampler  
ATHA = 1.9  
% Recovery = 90%  
Dark, organic rich silty sandy soil with  
much clay. Moist and more consolidated.  
Bedrock exposure nearby. Slate fragments.  
Slate bedrock encountered with Post Hole  
digger at 0.8'.



1230 NWD 002 BH Int 1

Int 0.0-1.0

PID = 0.8 BG

= 0.8 Open Spoon

ATHA:

% Recovery = 95%

Dark, organic rich soil. Sandy silt. Clayey silt. Moderately cohesive and moist. Many small gravel particles.

NWD - 002 BH Int 2

Int 3.0'-4.2' Redrock at 4.2'

PID = 0.8 PPM

= 1.0 PPM Open Sampler

ATHA: 5.9 PPM

% Rec: 90%

Darker brown silty, sandy material w/ clay. Cohesive. slightly moist.

1300 NWD-003 BH

Int 0.0'-1.0'

PID = 0.8 BG

0.8 PPM open Sampler

ATHA: 0.9

% Recovery: 100%

Dark brown organic rich soil. Mostly poorly sorted sand, silt. and gravel soil.

NWD-003 BH

Int 2

Int 4.2-5.7' BLS Redrock at 5.2' BLS

PID = 0.8 BG

= 0.8 Open Spoon

ATHA: 1.0 PPM

% Rec = 100%

Saturated at 2.3' BLS. Becoming Lt. Brown to tan clayey silt. Mostly silty clay at bottom. Saturated and consolidated.

NWD-004 BH

Int 1

Int 0.0-1.0'

Redrock at 1.0' Auger Refusal

Post-Hole Refusal

PID = 0.8 BG

= 0.8 Open Sampler

ATHA: 0.8 PPM

% Recovery: 90%

Soil: Poorly sorted, dark, organic rich soil. Sandy silt. Gravel.



-25-

1410 Complete Sampling At AOCs boreholes  
J.B. Begins to Grout borings

E.P. & M.H. obtain NWD-005 SW  
and NWD-005 SD.

Surface Water Sample

Field Parameters

Temp 64.1° F

Cond: 16:50 at x10 at 64°

pH: 9.45 at 64°

Calibrated pH meter w/ 7.0 ph buffer

and 10 pH buffer solution. Took 6  
iterations w/ zero & slope to stabilize.

1510 Obtained Surface water samples from  
area of Culvert.

2 40ml vials	HCL	VOCs
1 1 qt Jar	-	SVOCs
1 bottle	1/100	Metals
1 1 qt Jar	-	TPH

Obtained Sediment Sample from  
Culvert Area

-26-

1530 Obtained CTS-004 SF Surface  
Sediment Sample.

Completed Sampling at Hot Springs ANGUS

1540 Begin Chain-of-Custody for  
sampling.

1545 Quin Shaker arrives at the site to  
describe the last set of soil samples.

E.P. continues to prepare samples for  
shipment.

J.B. Grouts holes and prepares waste  
drums. Moving drums to storage  
area.

MH continues to analyze samples on  
field GC.

1615 Finish preparing samples. E.P. will  
drive samples w/ extra ice chests  
to Lab in Little Rock.

J.B. and M.H. pack all supplies



-27-

1 in the classroom for the weekend.  
Will pack all GC items in the van to practice on the weekend.

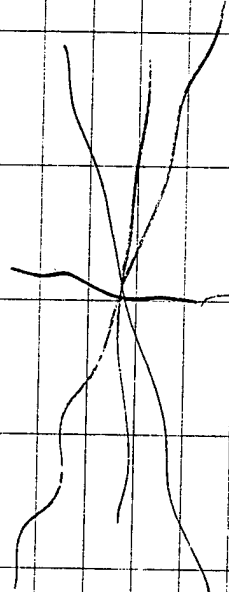
1630 E.D. departs Station for Little Rock.

1730 Arrive at Environmental Services Company, Inc. to deliver samples. Custody relinquished to Debra Webster at 1745 hrs. Depart Lab.

1845 Arrive back at Hotel.

Review word that equipment for follow on work has arrived.

1900 Conclude work related activities.



Paul E. Finkbein 2/25/94 11.5 hrs

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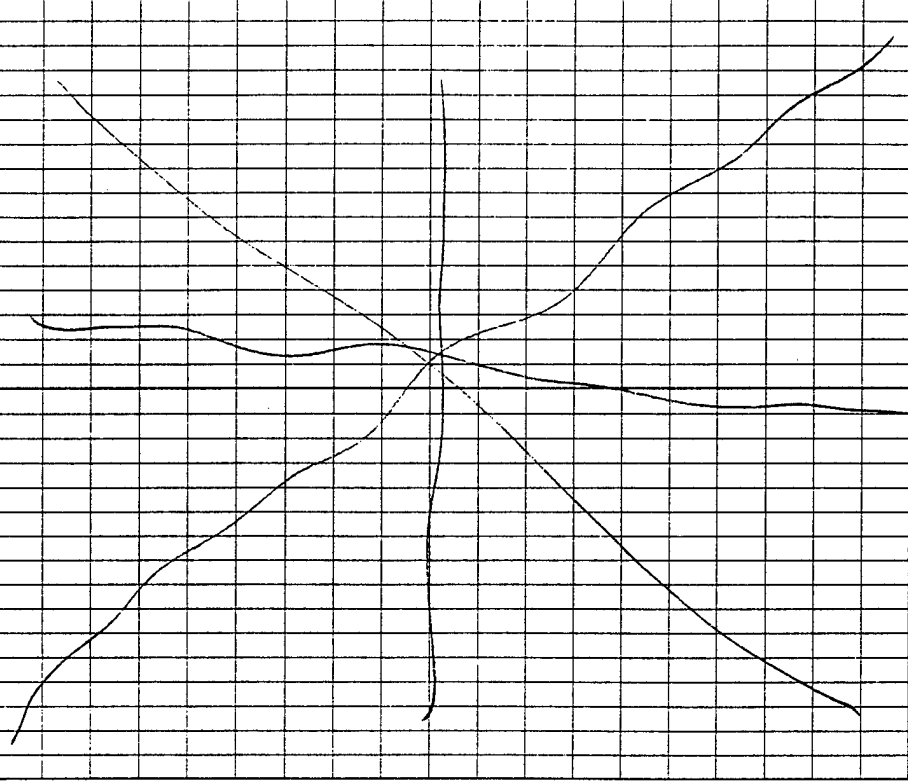
26 FEB 94

DAY 4

SAT

1100 Review GC data.

1200 End of Hot Springs ANG's work related experience.



Paul E. Finkbein 2/26/94 1 hr



-29-

27 FEB 94

DAY 5

SUN

No Work Related Activities

4/27/94 0 hrs

4/27/94 0 hrs

-30-

28 FEB 94

DAY 6

MON

0730 Arrive At Station to pack supplies  
And complete demobilization

0740 B&F Engineering Surveyors arrive at  
Site Walk through the AOCs and  
show all the sampling locations to  
be surveyed.

0800 Begin to load the van.

0830 Secure drums in storage area

Drums: 3 TOTAL

1- DECON WATER

3/4 full

1- Soil Cuttings

NWD-002 BH

NWD-003 BH

NWD-004 BH

005-002 BH

005-004 BH

1- Soil Cuttings

CTS-001 BH

CTS-002 BH

CTS-003 BH

1 ft<sup>3</sup>

2 ft<sup>3</sup>

1 ft<sup>3</sup>



0915	Debrief	MSG	Cover on site
	cleanup.	Site	Clean

0930	DEPART	H <sup>+</sup> SPINNES ALOS
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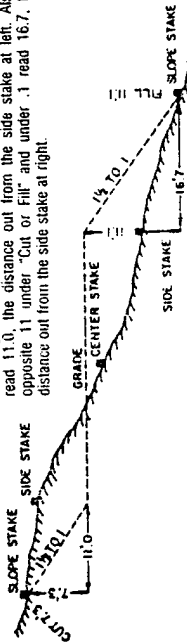
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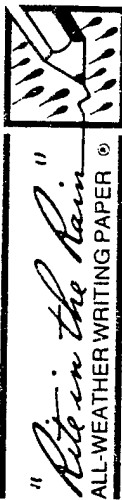
# DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under 3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Distance out from Side or Shoulder Stake	Distance out from Side or Shoulder Stake									
	0	1	2	3	4	5	6	7	8	9
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4



Env. Scientist

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February 23 1994

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[illegible]

0750	Leave hotel
0810	At Station
	Check in w/ Sgt Cannon Tour site.
0845	Walked van into Storage Room
	Decomng Equipment
1015	E.P. & I go out to stake & mark location
1030	Safety Meeting E.P., M.H., S.B.
	Appointed M.H. as SSO
	• Discussed drill safety
	• Route to Hospital



1050 Get Engineers & Surveyors  
Met Quinn Barber & John Thornton

1135 } Go to FedEx

1200 lunch

1254 at Station.

Deconning

1544 go out start busline  
Asphalt on  
Old Drum Storage Area  
(ODS)

1635 Leave Base

At Walmart  
Get Supplies

1715 at Hotel

Jan Bugel

(3)

Thursday

24 February 1994

0615 Leave Hotel

Eat breakfast (35 min)

0710 On base.

Roading Van

0800 Safety Mtg. EP, MH, JB

0810 at NEF Site  
Set-up & drill.  
hand auger holes

Driller arrive

Move to CTS site  
sample 3 holes

1330 go to WALMART for  
Supplies



1405 Move back to  
NEF Site

Do hand auger borings

NEF-001 BH

NEF-002 BH

NEF-003 BH

NEF-004 BH

NEF-005 BH

1645 Grout holes. Check-up  
location

1715 Break down Decon Area.  
Load Van

1800 Leave base

1815 At Hotel

Jan Byrd

Friday

(5)

25 February 1994

0630 Leave hotel

Eat Breakfast (45 mins)

0728 On Base

Set up Decon Area  
at old wash rack

Taking samples  
at Site ODS & NW F.

Grout holes

1530 Pack-up equipment

1600 Prepare samples for  
delivery to Lab

Unload Van into  
store room. Wait  
for GC. data

Carle drive completed  
Little Rock



1840 Leave Base

1900 At Hotel

Geoffrey

Monday

28 February 1954

0730 On Base

Packing Van  
#2

Double checking all  
sides & make sure  
all is clear

0918 Leave base.

At hotel

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